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Report to the Chairman, Subcommittee on National Parks and Recreation, Committee on Interior and Insular Affairs House of Representatives

December 1986

WILD AND SCENIC RIVERS

Certain Rivers Not in National System Generally Retain Original Values

COMPLETED
159

ORIGINAL

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Economic Development Division

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The Honorable Bruce F. Vento
Chairman, Subcommittee on National
Parks and Recreation
Committee on Interior and Insular Affairs
House of Representatives

Dear Mr. Chairman:

This report is in response to your request that we examine the status of eligible rivers studied under the Wild and Scenic Rivers Act that were recommended for state rather than federal protection. The report also addresses your question on whether certain federal wild and scenic river studies included required estimates of federal land acquisition and river management costs.

The report describes changes in the condition of 13 rivers, in terms of water projects, shoreline development, resource development, road and utility construction, water quality, and recreational use, since their federal wild and scenic river studies were completed. The report also discusses river studies that omitted estimates of potential federal land acquisition and river management costs, making one recommendation to the Secretary of the Interior on the matter. As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 15 days from the date of this letter. At that time we will send copies to the Secretaries of the Interior and Agriculture. Copies will also be made available to others upon request.

This work was performed under the direction of Michael Gryszkowiec, Associate Director. Other major contributors are listed in appendix XIII.

Sincerely,

J. Dexter Peach

J. Dexter Peach
Assistant Comptroller General

Executive Summary

Purpose

Free-flowing rivers have often been the targets of federal water resource development projects. The Wild and Scenic Rivers Act established a federal program to counter this trend and protect the free-flowing, natural conditions of certain rivers from activities such as hydroelectric power production and excessive shoreline development. Eligible rivers are not always included in the federal program, sometimes instead being recommended for protection by state or local governments. As of September 1986, the federal program protected 7,224 miles of 66 rivers.

In September 1985 the Chairman of the Subcommittee on National Parks and Recreation, House Committee on Interior and Insular Affairs, expressed concern that the wild and scenic values of eligible rivers not included in the federal program may have been threatened by subsequent development. As a result he asked GAO to obtain certain information including (1) various development activities on 13 rivers not recommended for federal protection and (2) whether river studies that recommended against federal protection contained required estimates of federal land acquisition and river management costs. (See pp. 10 to 16.)

Background

Rivers, or segments of rivers, may be placed in the federal wild and scenic rivers system through a study process that includes a congressionally directed study by a federal agency. The act requires the federal agency studying the river to include estimates of the cost to acquire land, if necessary, as well as the cost of administering the area if it is included in the system.

The Departments of the Interior or Agriculture are directed to conduct the studies and report to the President on whether the river being nominated has the necessary qualifying characteristics. The President in turn recommends to the Congress whether the river should receive federal protection. Regardless of the President's recommendation, the study river is protected from federally licensed or assisted water projects under the act up to 3 years after the study is submitted to the Congress. When the President has recommended against federal designation of an eligible river, he has usually done so for one of two reasons—the river would be more appropriately protected by a state or local program or federal land acquisition costs would be excessive. Since 1968, 81 studies have been completed with the Congress placing 16 rivers under federal protection. (See pp. 12 to 16.)

To obtain information on overall development activities, GAO looked at 13 rivers that had been found eligible for inclusion in the national system but had been recommended for state or local protection and for which the 3-year poststudy protection period had lapsed. To determine whether required cost estimates were being included, GAO reviewed 27 river studies that had been submitted to the Congress since 1978. (See pp. 16 to 18.)

Results in Brief

The rivers GAO reviewed have generally maintained the qualities that originally made them eligible for the national system. State and local governments associated with 11 of the 13 rivers have initiated varying levels of protection. Most importantly, the 13 rivers have not been affected by new water projects that materially changed their free-flowing condition. While some development has occurred along the rivers' shorelines, on only three rivers have these developments greatly degraded wild and scenic values. One river now has much greater water pollution problems serious enough to threaten recreational and scenic values. (See pp. 20 to 43.)

Of the 27 studies reviewed for cost estimates, GAO found that 9 did not contain detailed, specific land acquisition and management cost estimates, which would better enable the Congress to decide which rivers to include in the system. (See pp. 50 to 53.)

Principal Findings

Water Development Projects

No new dams or other water projects have been developed on any of the 13 rivers since their federal studies. A major new hydropower dam on the Penobscot River was actively pursued for development, but construction was precluded after a Maine regulatory agency denied it on the grounds of harming the river's water quality and recreational values. Existing dams on the Housatonic, Illinois, Kettle, Shepaug, and Youghiogheny (Pennsylvania segment) have been or may be modified for hydroelectric production; but these changes are generally not considered by state and local officials as detrimental to the rivers' preexisting flow conditions. In addition, major water supply diversions from the Shepaug and Illinois are being considered by state or regional authorities. However, state and local officials told GAO that the diversions' potential effects of reducing flow and degrading scenic values on the rivers may well preclude development. (See pp. 23 to 26.)

Other Developmental Activities

According to state and local officials, most of the rivers GAO reviewed have not experienced industrial, residential, or utility developments that have dramatically affected their remarkable qualities. However, two rivers—the Suwannee (Florida segment) and the Youghiogheny (Maryland segment)—have suffered from resource development activities: phosphate mining that threatens water quality on the Suwannee and logging on the Youghiogheny. In addition, the water quality of the Illinois has deteriorated significantly as a result of inadequate sewage treatment and other sources, and the Wisconsin has been adversely affected by residential development on its scenic bluffs.

For the remaining rivers, minor developments have occurred but state and local officials and private interest groups generally do not consider them seriously detrimental. Water pollution of many rivers at the time of study has not worsened significantly (except on the Illinois) but neither has it been eliminated. Increased recreational use and its attendant littering and trespass problems are now a concern on six rivers. (See pp. 27 to 43.)

Cost Estimates

Of the 27 river studies GAO reviewed, 18 contained the specific estimates of potential federal land acquisition and management costs. Each of the nine studies that did not provide such specific estimates was prepared by the Interior Department after 1981. Eleven of the 27 studies included excessive federal costs as part of the rationale for recommending against including the subject river in the national system even though the Interior Department had no specific estimates to support its position in 8 of them.

Interior Department officials said they omitted specific cost estimates because they believed that strong local opposition made it highly unlikely that the rivers being studied would ever be added to the national system regardless of federal costs. Consequently, officials believed the expenditure of funds to prepare specific estimates of the costs of adding the river to the national system would be imprudent. However, the Department is required by the act to provide various pieces of information about a river, including cost estimates. GAO believes that such estimates are needed to assist the Congress in independently judging the merits of the President's recommendation. Since the Congress ultimately decides whether a river will be included in the federal program, Interior should provide the information the Congress needs to reasonably evaluate whether the river should be added, including the costs of inclusion. (See pp. 50 to 53.)

Recommendations

GAO recommends that the Secretary of the Interior ensure that future wild and scenic river studies contain specific cost estimates of potential federal land acquisition and management. (See p. 53.)

Agency Comments

GAO discussed the contents of the report with program officials and their comments were incorporated where appropriate. However, at the request of the chairman's office, GAO did not obtain official agency comments on the report.

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Abbreviations

BLM	Bureau of Land Management
FERC	Federal Energy and Regulatory Commission
FWS	Fish and Wildlife Service
GAO	General Accounting Office
NPS	National Park Service
PCB	polychlorinated biphenyl
RCED	Resources, Community, and Economic Development Division
SCS	Soil Conservation Service

Chapter 1

Introduction

The Wild and Scenic Rivers Act (Public Law 90-542, October 1968, 16 U.S.C. 1271 et seq.) established a policy that certain rivers or segments of rivers possessing ". . . outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. . ." should be preserved in free-flowing condition and protected for the public's benefit and enjoyment. (See fig. 1.1.) The act established procedures whereby qualified rivers possessing at least one outstanding attribute can become designated components of a national wild and scenic rivers system. As of September 1986, the national system consists of 66 rivers or segments, totaling 7,224 miles.[1]

Intended by the Congress as a complement to federal policies aimed at water resource development, the act prohibits federal licensing, assistance, or construction of water projects that altered a designated wild and scenic river's free-flowing condition or diminished its outstanding values. Prohibited or restricted projects include those associated with public and private hydroelectric power production, dredging operations, channelization, and diversions for water supply. The act does not explicitly prohibit new shoreline development on privately owned lands. However, under certain circumstances federal protection could limit such development. For example, the act authorizes federal agencies to acquire privately owned lands or easements to protect scenic values, preclude new development, or provide public access to the river. Agencies may also seek cooperation from state or local governments to apply land-use zoning controls within the river corridor or otherwise participate in its administration.

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[1] During the processing of this report in November 1986, legislation was enacted adding six rivers (139 miles) into the national system.

Figure 1.1: The Lower St. Croix National Scenic Riverway, Wisconsin-Minnesota

Credit: Richard Frear
Source: National Park Service

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In addition to the national system, many rivers are also protected by state wild and scenic river programs. Thirty-two states since 1965 have provided some form of protection to 321 rivers totaling 11,571 miles. State efforts thus afford some protection to 60 percent more river miles than does the national wild and scenic rivers system.

The Federal Wild and Scenic Rivers Study Process

The Wild and Scenic Rivers Act establishes three ways for rivers to become part of the national system. First, the Congress may directly designate a river through specific legislation. Of the 66 rivers and river segments in the system, 38 have been incorporated this way. Second, the Secretary of the Interior is authorized under section 2 (a)(ii) of the act to place rivers already in a state system into the national system when requested by a state governor. Twelve rivers have been added in this manner.[2] The third method of adding rivers is the river study process. Since 1968, 91 rivers have been designated for study, 81 studies have been completed, and 16 rivers have been added to the system through this method.

The study process begins with congressional legislation directing a federal agency (the Department of the Interior or, when national forest lands are involved, the Department of Agriculture) to study and report to the President on the merits of adding the river to the national system. On the basis of this study, the President is then required to report to the Congress his recommendations with respect to designating the river or river segment as a component of the system. The Congress must then enact legislation to make the river part of the system.

The act sets out several study requirements. First, the study must present information about the characteristics or values that make a river eligible for the national wild and scenic rivers system. The values are the same as those found in the act's definition of an eligible river—i.e., the scenic, recreational, geologic, fish and wildlife, historic, cultural, or other qualities that make the river outstandingly remarkable. The study agency generally devotes much of its report to describing these qualities and evaluating whether they meet the eligibility criteria. Second, the study must provide estimates of the costs to the federal government of acquiring lands or interests in lands and administering the area should the river be added to the national wild and scenic rivers system.

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[2] One river, the Lower St. Croix, was added to the national system by a combination of congressional designation and secretarial designation under section 2(a)(ii).

In addition to these two study requirements, the study agency must also include in its report maps and illustrations of the study area; identify what federal agency would administer the area should it be added to the system; discuss the extent to which the proposed administration could be shared with state or local agencies; and describe current land ownership and use and how land and water use would be curtailed, enhanced, or foreclosed if the river became part of the national wild and scenic rivers system. The studies must also indicate the potential classification of the river (or segment) into one of three categories defined in the act—wild, scenic, or recreational—[3] depending upon the type and extent of development at the time of study.

The act states that a river being studied for potential addition to the national system will be protected from federally licensed or assisted water resource projects up to 3 years after the President submits the report to the Congress. The act also prohibits minerals development and restricts timber harvesting, road construction, and similar activities on adjacent federal lands for the same time period while rivers are being considered for potential addition.

While requiring the President to make a recommendation to the Congress on whether a studied river should be included in the national system, the act affords him broad discretion to make a positive or negative recommendation regarding designation. Thus, the President may find that a river met all eligibility requirements for designation as a national wild and scenic river and yet conclude that the river was not suitable for designation and make a recommendaton against inclusion. In recent years the President has made negative recommendations on eligible rivers for various reasons, including his belief that the river would be more appropriately protected as part of state or local programs or that land acquisition costs would be excessive. The Congress is not bound by the President's recommendation. Similarly, whether a river becomes part of a state river protection program is up to a state to decide.

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[3] Wild—those rivers or sections that are free-flowing and generally inaccessible except by trail, are unpolluted, and have essentially primitive shorelines that show little or no evidence of human activity (such as timber harvest or agriculture).

Scenic—those rivers or sections that are free-flowing, accessible in places by roads or railroads (with occasional bridge crossings or short stretches of conspicuous or longer stretches of inconspicuous roads or railroads), and have largely undeveloped shorelines. However, small communities and scattered structures are acceptable, as are some agricultural and nearby timber harvest activities.

Recreational—those rivers or sections that may have some dams or diversion (provided the waterway remains generally natural) and show substantial evidence of human activities. These may include extensive residential development, a range of agricultural uses and timber harvesting, and the existence of parallel roads or railroads and bridge crossings.

Status of Wild and Scenic Rivers Studies

Since 1968, 81 river studies have been completed and sent to the Congress by the President.[4] From these studies, the Congress has added 16 rivers and segments to the system. Figure 1.2 shows the disposition of these studies as of September 1986.

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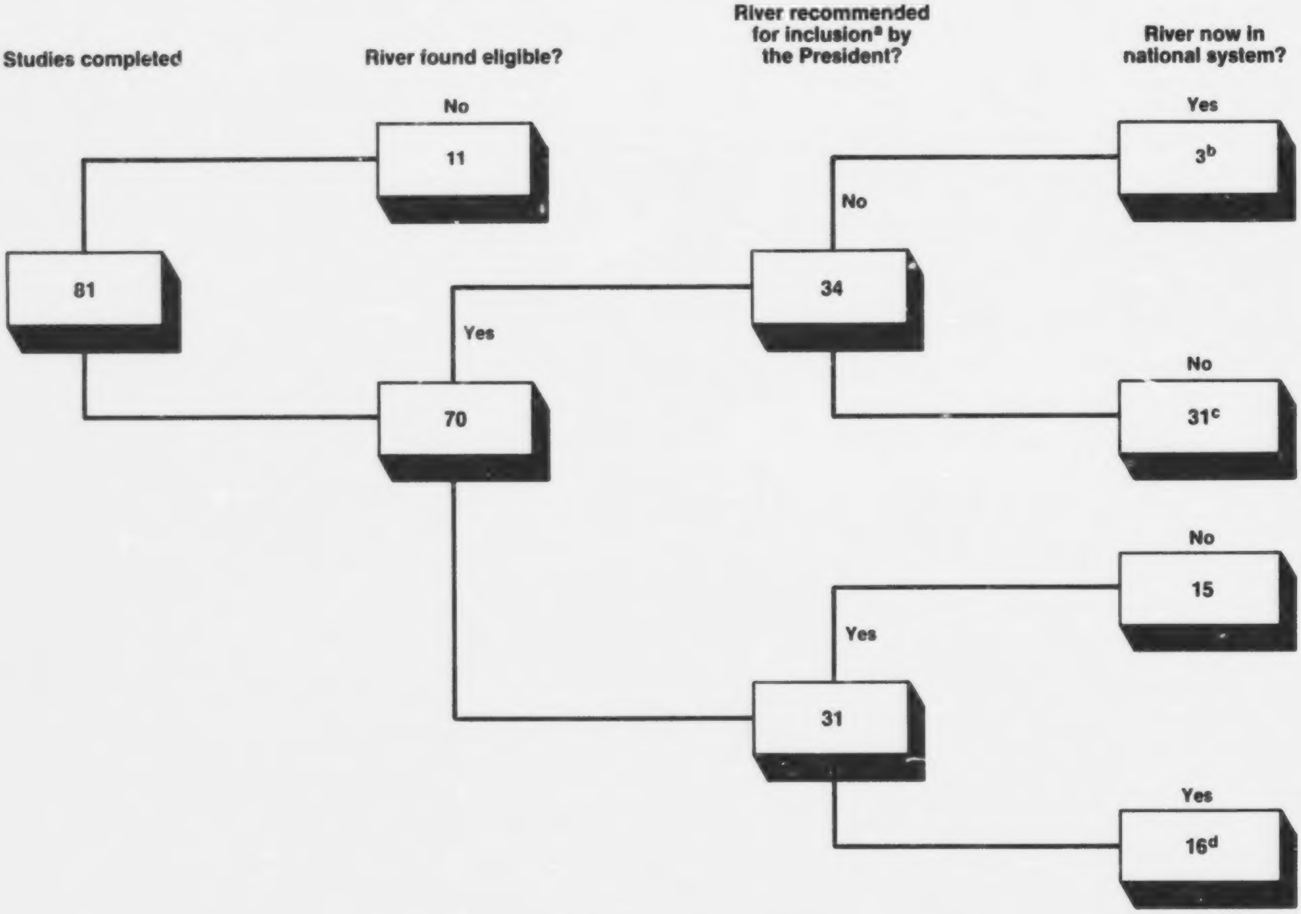
[4] Two studies (for the Green and Yampa rivers in Colorado) were sent as interim reports to the Congress in November 1983. The recommendation was that the Congress delay action on the rivers pending outcome of several issues.

Figure 1.2: Status of Completed Wild and Scenic Rivers Studies, as of September 1986


Studies completed
River found eligible?
River recommended for inclusion[a] by the President?
River now in national system?
81
No
11
Yes
70
34
No
Yes
3[b]
No
31[c]
31
Yes
No
15
Yes
16[d]

[a] Five river studies were transmitted to the Congress without recommendations.

[b] Three rivers not recommended for congressional designation have come into the system by Secretarial designation under section 2(a) (ii).

[c] Part of the Obed River study corridor was designated by the Congress before the study was transmitted by the President. The President later recommended against congressional designation of the remaining study segment.

[d] This includes the Lower St. Croix River, which was added to the system by a combination of congressional designation (1972) and Secretarial designation under section 2(a) (ii) in 1976.

Source: Departments of the Interior and Agriculture records as compiled by GAO.

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Nineteen rivers, or about one fourth of the rivers analyzed under the act's study process, are now in the national system. Sixteen were designated by the Congress and three were designated by the Secretary of the Interior at the request of the respective governor under section 2 (a)(ii). Figure 1.2 also demonstrates that no river that the President did not recommend for inclusion in the national system has been added by congressional designation. Moreover, 15 of the studies that were recommended for inclusion in the system have not yet been designated by the Congress.

For 21 of the 34 eligible rivers that the President recommended not be included, he concluded that state protection was more appropriate. Of these 21 rivers, 13 have had their studies completed more than 3 years ago and hence are no longer protected by the act.

Objectives, Scope, and Methodology

In a September 1985 letter, the Chairman of the Subcommittee on National Parks and Recreation, House Committee on Interior and Insular Affairs, expressed concern about the President's recommendations against adding eligible rivers to the national wild and scenic rivers system. In this context, the Chairman asked us to review those rivers that had been studied under the act, found qualified to be components of the national wild and scenic rivers system, but were not recommended by the President for designation. On the basis of his request and subsequent discussions with his office, we agreed to (1) determine what developments have occurred on the 13 rivers listed in table 1.1 whose 3-year protection under the act has lapsed, (2) examine post-1978 study reports of 27 eligible rivers that recommended against designation in the national system to determine if these studies contained required cost estimates for federal land acquisition and management, and (3) determine whether the Federal Energy Regulatory Commission (FERC), Corps of Engineers (Corps), or Bureau of Reclamation has initiated or plans to initiate any hydropower or other water projects on 21 other rivers (listed in table 2.7) whose studies were submitted to the Congress in April 1985. The President recommended against designation of these rivers. Four of them were not eligible according to the act's wild and scenic criteria, nine were recommended for state protection, and one had already been partially designated into the national system. The remaining seven were not recommended for designation because of excessive federal costs or lack of state and local support.

With respect to the first objective, table 1.1 shows the 13 rivers that we reviewed and the date the study was sent to the Congress. In evaluating the status of developments on these rivers, we determined the rivers' conditions at the time they were studied for inclusion in the national wild and scenic rivers system. To develop this baseline condition, we reviewed each study report to identify existing water projects; shoreline developments (which we define as the placement of communities, vacation homes, commercial structures, or industrial plants); resource developments (which we define as agricultural activities, mining, or timber harvesting visible from or affecting the river); recreation-use conflicts (such as crowding, trespassing, or other related incompatible activities); water quality (the extent of pollution); and roads, railroads, or utilities (electric or gas transmission lines) visible from the river. We also noted potential threats identified in the federal studies under each of the above categories.

Table 1.1: Eligible Rivers Recommended for State and Local Government Preservation

River	Date study sent to Congress
Upper Iowa (Iowa)	May 1972
Suwannee (Fla. and Ga.)	Mar. 1974
Gasconade (Mo.)	May 1977
Penobscot (Maine)	May 1977
Buffalo (Tenn.)	Oct. 1979
Housatonic (Conn.)	Oct. 1979
Illinois (Okla.)	Oct. 1979
Kettle (Minn.)	Oct. 1979
Pine Creek (Pa.)	Oct. 1979
Shepaug (Conn.)	Oct. 1979
Wisconsin (Wis.)	Oct. 1979
Youghiogheny (Md. and Pa.)	Oct. 1979
John Day (Oreg.)	Feb. 1980

With this baseline in place, we obtained information about developments that have occurred or are expected or planned since the studies were sent to the Congress though interviews and reviews of documents obtained from federal, state, and citizen or conservation organizations. For states with river protection programs, we contacted scenic river program offices; and for states without such programs, we contacted recreational or natural resources officials to obtain information on the river's status. We also contacted local and private organizations involved with protecting these rivers. We did not evaluate the effectiveness of state and local efforts in protecting these 13 rivers or the overall merits of federal versus state and local protection.

We also visited three rivers—the Florida segment of the Suwannee, the Youghiogheny (both Maryland and Pennsylvania segments), and Pine Creek—to observe conditions on the rivers, to validate the information given to us during interviews, and to gain an appreciation for the outstandingly remarkable values represented by these rivers. We selected these three rivers because each had different scenic and natural conditions at the time they were studied and had experienced varying development changes since that time.

Finally, we reviewed federal agency data bases and other information sources to identify water resource development projects constructed or planned for these rivers. We used FERC's data base on constructed, proposed, or potential hydroelectric power facilities. This data base describes federal, state, municipal, and private projects across the country. We contacted the Corps to obtain information on their flood control, navigation, or multipurpose water projects (actual or potential) and verified the current status of any Corps projects cited in the wild and scenic river studies as potential threats to the rivers. We also obtained similar information from the Department of Agriculture's Soil Conservation Service (SCS).

With respect to the second objective, we examined the 27 reports since 1978 that found the subject rivers eligible for inclusion in the national system but nonetheless recommended against designation, to determine if the report presented estimates of federal land acquisition costs. We reviewed the act to determine the requirements for cost estimates in studies. As agreed with the requester's office, we identified those studies where potential federal costs were a factor in recommending against federal designation but that provided no specific cost estimates.

With respect to the third objective, we reviewed FERC's hydroelectric facilities data base to identify proposed, planned, or permitted projects on the 21 river studies sent to the Congress in April 1985. We also checked with the Corps and the Bureau of Reclamation to discuss any water projects they may be considering, constructing, or have completed on these rivers.

We conducted our work between January and September 1986. We discussed the information we obtained with officials in the Department of the Interior and the Department of Agriculture. However, in accordance with the requester's wishes, we did not solicit official agency comments on a draft of this report. With this exception we made our review in accordance with generally accepted government auditing standards.

Chapter 2 summarizes how conditions have changed on the 13 rivers recommended for state and local protection and whose 3-year protection period has lapsed. It also provides a description of the water projects proposed or started on 21 other rivers whose studies were submitted to the Congress in April 1985. Detailed information describing developments and state and local protection efforts for each of the 13 rivers is presented in appendixes I to XII. Chapter 3 presents information on the estimates of federal costs for including the 27 study rivers in the national system.

River Conditions and Associated State Protection Efforts

Since the 13 studies were completed for which the President recommended that the rivers be placed under state rather than federal stewardship, conditions on most of these rivers have remained relatively unchanged according to state, local, and environmental group officials and documents they provided (see figs. 2.1 and 2.2). None of the rivers have been negatively affected by new water development projects. However, four rivers have had their original qualities degraded because of new shoreline or resource developments or water pollution problems. Water quality problems largely present when the rivers were studied have generally not worsened but remain a concern. Because these rivers have retained their outstanding values, recreational pressures are growing.

Relatedly, we found that water development projects have not to date adversely affected 21 other rivers assessed in April 1985 reports to the Congress, but 1 project under study could inundate another 8 miles of a river in West Virginia. Finally, we found that most state and local officials and private interests on each of the 13 rivers did not express interest in a federal wild and scenic river designation now or when the rivers were studied. In lieu of federal protection, state and local governments and private organizations associated with 11 of the rivers have initiated varying levels of protection efforts.

Rivers Generally Not Degraded but Some Problems Being Experienced

Certain developments, such as water projects, shoreline residences, industry operations, timber harvesting, or roads, have the potential for physically and aesthetically degrading a wild and scenic river. For example, a dam would interrupt flow, inundate scenic and wildlife areas, and transform recreational experiences from river-based to lake-based. Because rivers and their shores provide many uses (waste treatment, drinking water, homesites), developmental pressures generally increase over time unless efforts are taken to prevent undesirable change. For most of the rivers we reviewed, the characteristics that originally qualified them for inclusion in the national system have not been negatively changed. In this connection we learned that no rivers had been negatively affected by new water development projects and, with several exceptions, the rivers had not experienced detrimental industrial, residential, or utility developments on their shorelines. We also learned, however, that water quality problems remain on nearly all the rivers and that most of the rivers are experiencing unanticipated problems associated with recreational overuse.

Figure 2.1: The Upper Iowa River in Iowa

Considered to be Iowa's most scenically diverse river, the Upper Iowa's vistas of bluffs, palisades, and pastoral farm lands have changed very little since 1971.

Source: Iowa Conservation Commission.

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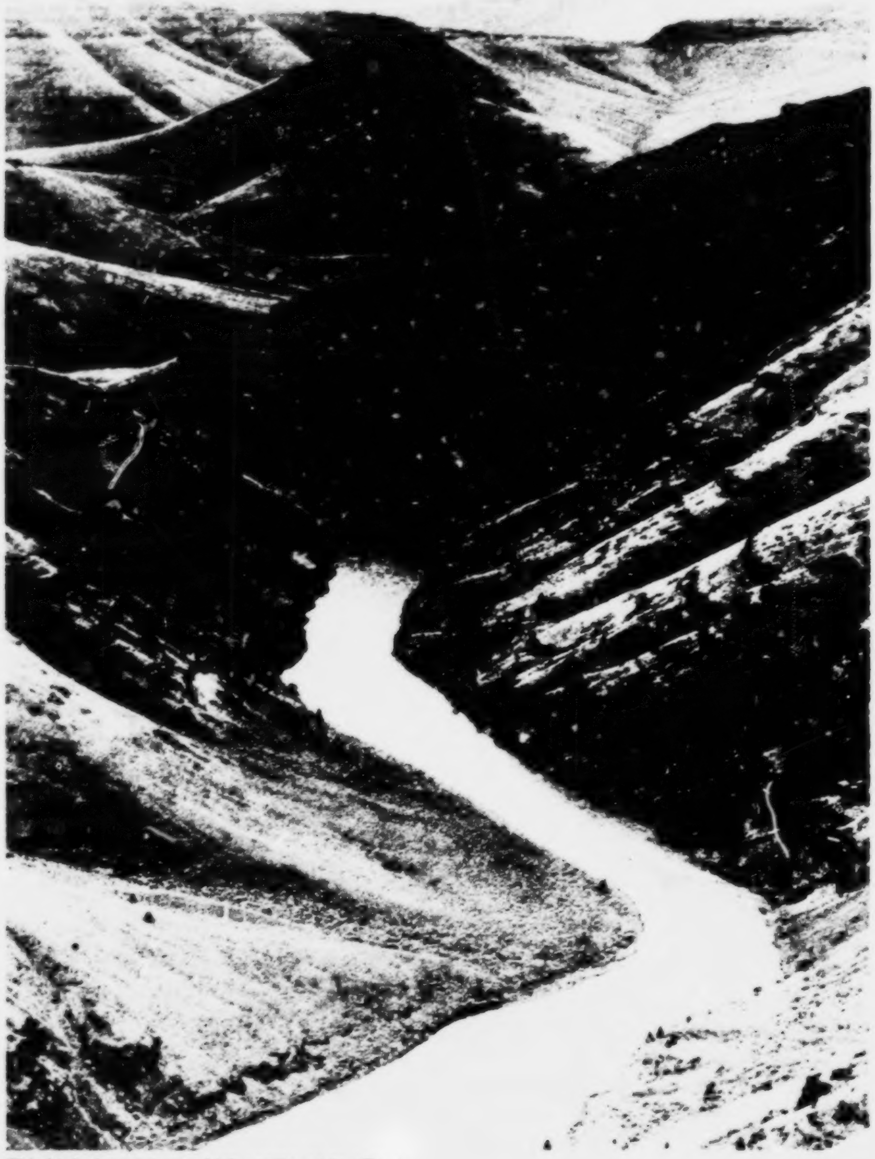
Figure 2.2: The Lower John Day River in Oregon



This high-desert river, which continues to offer a high quality wilderness recreational experience, has experienced no developments since 1979 that would reduce its scenic and natural values.

Source: Oregon State Parks and Recreation Division.

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The following sections discuss the condition of the rivers from the perspectives of water development projects, shoreline development (primarily housing), resource development (logging, mining), water quality, transportation and utility system construction, and recreational demands. We based this information upon interviews with state, local, and other officials and reviews of related documents.

Rivers Not Affected by New Water Projects

Major new water projects are not a problem on the 13 rivers we studied. As table 2.1 indicates, most of the new water project developments involve hydropower modifications on dams that had already impounded or affected flow conditions at the time the rivers were studied. As an example of such projects, figure 2.3 shows the Bulls Bridge hydropower project on the Houstonic River in Connecticut. The utility company proposes to install more efficient equipment to increase power production without changing the dam or reservoir. State and local officials and environmental group sources generally believe that the modifications of existing dams will not harm the rivers' natural or scenic values.

Table 2.1: Water Project Developments Since Federal Study

River	Type of new water projects	Status	Affect flow conditions?	Considered threat to river's qualities?
Buffalo (Tenn.)	None	—	—	No
Gasconade (Mo.)	None	—	—	No
Housatonic (Conn.)	Modernize and expand existing hydropower dams at Falls Village and Bulls Bridge	Planned—FERC permit applied for in 1985	No	No[a]
Illinois (Okla.)	Modify existing Lake Frances Dam for hydropower	Planned—FERC issued preliminary study permits in 1985	Unknown	Unknown[b]
	Two water supply impoundments proposed at Eldon and Tahlequah	Legislature approved, but construction unlikely	Yes	Yes[c]
John Day (Oreg.)	Small streambank stabilizations	Constructed under state regulations	No	No
Kettle (Minn.)	Reactivate hydropower on existing state-owned Sandstone Dam	Planned—FERC issued permit in 1982. Dam needs repair—state may demolish.	No	No
Penobscot (Maine)	None	—	—	No
Pine Creek (Penn.)	None	—	—	No
Shepaug (Conn.)	Hydropower reactivated on existing Bantam Dam after modernization	Constructed and operating since 1981	No	No[d]
	Water supply diversion being studied	Under study by regional and state agencies	Yes	Possibly[e]
Suwannee (Fla. and Ga.)	None	—.	—	No
Upper Iowa (Iowa)	None, but state plans to remove partially demolished dam	Planned	Yes (improve)	No
Wisconsin (Wis.)	None, but state wants to modify upstream dam operations to improve conditions on scenic corridor	Addressed in state's draft mgt. plan	Yes (improve)	No
Youghiogheny (Md. and Pa.)	Borough to modify existing Corps of Engineers flood control dam in Pa. to produce hydropower	Planned—FERC issued license in 1985. Project design not finalized.	No	No

[a] Although the utility company plans to utilize the same flow conditions to operate the modernized and expanded Falls Village and Bulls Bridge dams, a conservation group official said that the Bulls Bridge Dam would reduce downstream flow to below-minimum levels required to sustain fisheries. Utility company and local officials stated the projects will not alter existing flow conditions or river values.

[b] Because the permittee has not yet presented the project's design proposal to the Oklahoma Water Resources Board, no information is available on how the hydropower modification will affect downstream scenic river values.

[c] The state legislature in 1980 approved two major water supply impoundments on the Illinois as part of a comprehensive water supply plan. However, a state official told us that many other alternatives were identified on other rivers, and it is unlikely the state would dam the Illinois, a popular, state-designated scenic river.

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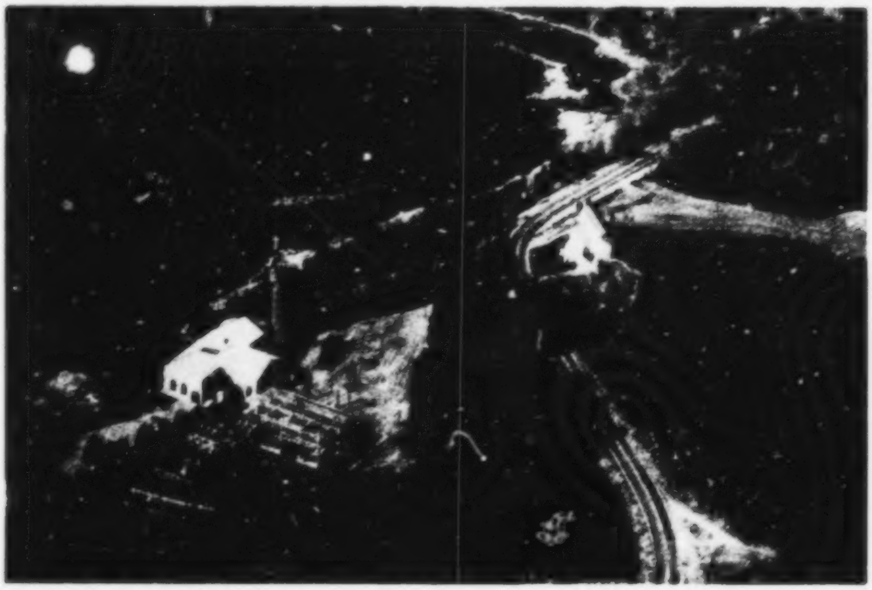
[d] The Bantam River Dam is operated to maintain downstream minimum flow levels to support fish. A local official stated that the project's water releases are insufficient for the fish, and changes in operation will be sought. However, a utility company official disagreed with this assessment. He told us that the reactivated dam does not change flow conditions on the river and that the project is operated to maintain minimum flow levels agreed to with Connecticut's Department of Environmental Protection.

[e] No specific water supply projects have been presented for the Shepaug, and alternatives to diverting the Shepaug are being considered in light of the river's scenic and recreational qualities. According to the federal wild and scenic river study, it is possible that a project could be built that would not harm the scenic river's values.

Source: Interviews with state, local, and environmental officials and documents they provided.

Figure 2.3: The Bulls Bridge Hydropower Project on the Housatonic River, Connecticut



This facility is planned to increase from 7 to 19 megawatts of capacity.

Source: Northeast Utilities Company.

While no new major water projects have come to pass, one proposed project under consideration at the time of federal study was withdrawn from consideration in early 1986 only after a lengthy and highly controversial review by two state regulatory agencies. In addition, two other proposed projects in two other states remain under consideration.

The withdrawn project—the "Big A" on the west branch of the Penobscot River in Maine—involved a proposed 148-foot-high hydropower dam that would have flooded 4.5 miles of nationally important white water and land-locked salmon habitat in Ripogenous Gorge (see figs. 2.4 and 2.5). The project was under federal licensing consideration when the

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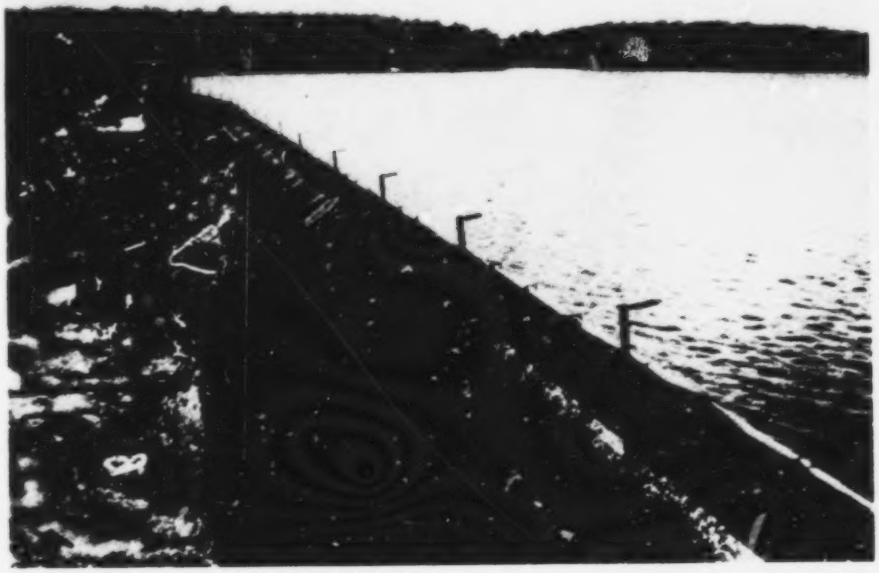
developer withdrew the application from FERC after being denied a necessary state water quality certificate (see app. VII for details).

Two other states—Oklahoma and Connecticut—are studying possible water supply diversions from the Illinois and the Shepaug, which would reduce their flows and degrade natural values. However, state or local officials in both areas told us that concern about the effect of reduced flows on these two rivers' scenic values has reduced the possibility of project construction.

Figure 2.4: Existing Hydropower Project on the Penobscot River in Maine



Existing hydropower dam on west branch (above Millinocket, Maine), similar to that proposed for the Big A Dam at Ripogenous Gorge

Source: Maine Department of Conservation

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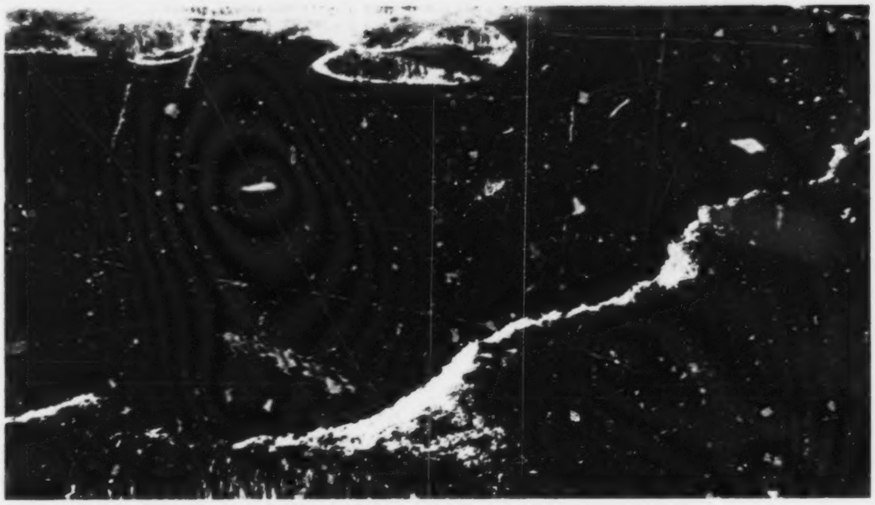
Figure 2.5: Reservoir on the Penobscot River in Maine



Canada Falls Lake, an existing hydropower dam reservoir similar to that which would have been created by the Big A Dam.

Source: Maine Department of Conservation.

Most Rivers Not Threatened by New Shoreline Developments

Except for 2 rivers—the Suwannee in Florida and the Wisconsin—new shoreline development has not been a problem on the 13 rivers we reviewed. The problems on the Suwannee and Wisconsin, involving the construction of numerous vacation homes, are attracting increased state and federal attention.

In April 1986, when we toured part of the Suwannee River in Florida, we saw many recently constructed houses, cabins, and trailers on the shore. These dwellings were associated with tree clearing, roads, satellite dishes, and seawalls. (See figs. 2.6 to 2.9.) In this regard, state agencies along with the U.S. Fish and Wildlife Service in Florida initiated regulatory efforts or land acquisition to restrict future development in order to protect remaining scenic and natural areas. The Florida state government and the U.S. Fish and Wildlife Service are acquiring lands and scenic easements on much of the Suwannee for wildlife refuges, parks, and natural areas. In addition, the state and local governments are implementing more land use controls to restrict development on the Suwannee's floodplain and important natural and scenic areas.

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Figure 2.6: Vacation Tree House on the Suwannee River in Florida

This development not only degrades the river's scenic values, but it also risks injury to the tree which could lead to riverbank erosion if the tree dies.

Source: Suwannee River Water Management District.

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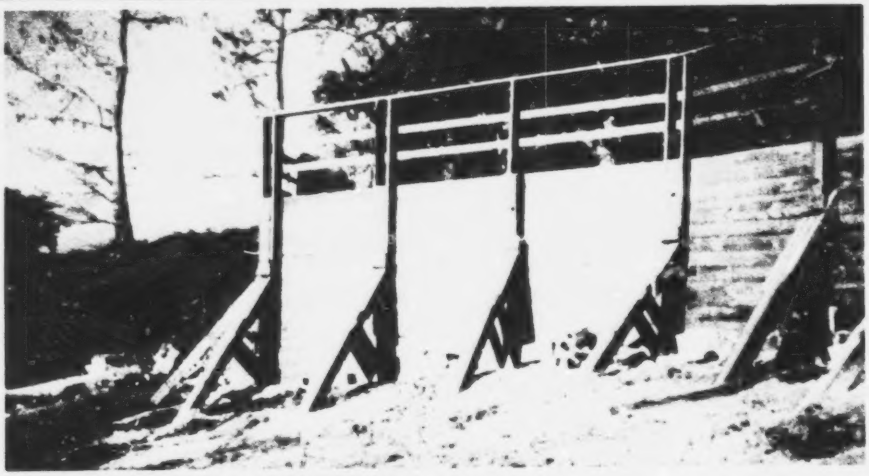
Figure 2.7: Residential Development on the Suwannee River in Florida



This development shows use of rock debris and lumber to prevent erosion of the shoreline. State floodplain regulations implemented in 1986 prohibit dwellings within 75 feet of the river.

Source: Suwannee River Water Management District.

Figure 2.8: Seawall Along the Suwannee River in Florida

Setback requirements of Florida's 1986 floodplain regulations prohibit this type of development.

Source:Suwannee River Water Management District.

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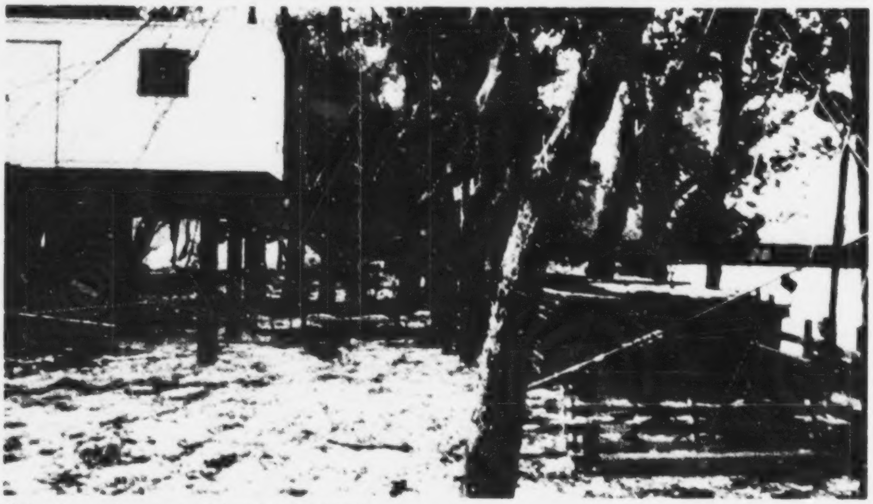
Figure 2.9: House Trailer on the Suwannee River in Florida



Setback requirements of Florida's floodplain regulations prohibit this type of development.
Source: Suwannee River Water Management District.

In Wisconsin the state government is preparing a river management plan that calls for acquiring land and easements to protect key areas as well as working with local governments to implement land use controls on scenic bluffs as an alternative to state land acquisition.

As shown in table 2.2, shoreline development problems are not now present on the remaining 11 rivers. In some cases the rivers are located in rural areas where little pressure for development has occurred. Other rivers are regulated by state agencies or local land use controls and conservation efforts to limit new development so that impacts on scenic and natural values are minimized. Thus, what development has occurred is generally not considered a problem by state and local officials and environmental group representatives we contacted.

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Table 2.2: Shoreline Developments Since Federal Study

River	Type/density of increased development	Considered threat to river's qualities?	State or local regulation
Buffalo (Tenn.)	None	No	None identified
Gasconade (Mo.)	None, but pressure to develop expected to grow	Yes—in future	None identified
Housatonic (Conn.)	Scattered residential and planned cluster development	No	Township ordinances and private land use planning
Illinois (Okla.)	Small amount of residential	Yes—in future	State health regulations prohibit septic tanks within 150 feet
John Day (Oreg.)	Isolated agricultural- related development	No	Oregon Scenic Waterways Program
Kettle (Minn.)	Minor, scattered residential and institutional	No[a]	Minnesota scenic river program and local land use ordinances
Penobscot (Maine)	None	No	Maine land use regulations restrict developments along designated river protection districts
Pine Creek (Pa.)	Minor residential development	No—but one proposed cabin development raises concerns	Local floodplain and land use ordinances
Shepaug (Conn.)	None	No	Local ordinances
Suwannee (Fla. and Ga.)	Substantial vacation and mobile home development concentrated in Florida	Yes—Fla.[b] No—Ga.	Yes, recent implementation of state and local land use ordinances in Florida
Upper Iowa (Iowa)	Scattered residential	No	None identified
Wisconsin (Wis.)	Scattered residential on shorelines, more recent trend toward residential development on scenic bluffs	Yes	Local land use ordinances apply to shorelines and floodplains. State draft mgt. plan for scenic bluffs
Youghiogheny (Md. and Pa.)	Scattered residential	No—Md.[c] and Pa.	Md. Wild River controls and Pa. park and game lands

[a] The federal correctional institute at Sandstone planned major reconstruction that would affect the river's scenic values. The federal agency agreed to state plans to reduce potential problems in protecting the scenic shorelands.

[b] Florida state officials indicate that implementation of state floodplain land use regulations, strengthened local zoning ordinances, and continued land acquisitions should stem the rapid-development trend on the Suwannee since 1973.

[c] A conservation group official expressed concern about Maryland allowing residential construction on 10-acre lots set back 300 feet from the river.

Source: Interviews with state, local, and environmental officials and documents they provided.

Few Rivers Experiencing Increased Resource Development Activities

When they were studied under the federal wild and scenic rivers act, 11 of the 13 rivers recommended for state protection were affected by resource development activities, such as agriculture, commercial forestry, or coal mining. Generally, the studies found these developments to be compatible with the rivers' scenic and natural values, although some problems were noted, such as water pollution or loss of scenic values. Two rivers did not have notable resource development activity. For the most part, as shown in table 2.3, the information we obtained indicates that since the studies had been completed, little has changed on most of the rivers from a resource development perspective. We did learn about certain agricultural-related changes on the Housatonic and John Day rivers that two local or environmental group officials said affect scenic values or water quality. However, none of our other sources indicated that these changes were causing serious problems on either river. Two rivers—the Suwannee in Florida and Youghiogheny in Maryland—have experienced increased resource development activities that state officials and local environmental group representatives now consider to be seriously detrimental to the rivers' natural and scenic values.

Table 2.3: Resource Developments Since Federal Study

River	Change in resource development activity	Threat to river's qualities?	State or local regulation
Buffalo (Tenn.)	None	No	None identified
Gasconade (Mo.)	None	No	State asks landowners to leave screen of trees if forests are cut
Housatonic (Conn.)	Conversion of dairy farms to sod farms	Yes[a]	State permits for sand/gravel mining
Illinois (Okla.)	None	No	None identified
John Day (Oreg.)	Conversion of natural cover to agricultual crops	Yes[b]	Oregon Scenic Waterways Program
Kettle (Minn.)	None	No	Minn. Scenic Rivers Program and Forestry Division regulate timber harvest
Penobscot (Maine)	New logging roads outside of protection district on east branch	No[c]	Maine restricts logging within river protection district

River	Change in resource development activity	Threat to river's qualities?	State or local regulation
Pine Creek (Pa.)	None	No	Logging, oil, and gas activities allowed on state forest lands, but restricted in scenic corridor
Shepaug (Conn.)	None	No	State permits for sand/gravel mining
Suwannee (Fla. and Ga.)	Expanded phosphate mining and processing in Florida. Timber harvesting and management in Florida.	Yes	State water quality protections applied to phosphate mining discharges. State regulates timber practices.
Upper Iowa (Iowa)	Some woodlands cleared for agriculture	No	None identified
Wisconsin (Wis.)	None identified	No	Wisconsin's draft mgt. plan addresses forest management
Youghiogheny (Md. and Pa.)	Logging on private lands in Maryland	Yes	Maryland Wild River regulations, but problems with enforcement

[a] A local official expressed concern that the conversion of dairy farms to sod farms increased phosphate pollution. However, no other sources indicated this was a problem. On other rivers, livestock waste runoff is a source of pollution too.

[b] An environmental group official told us that replacing natural cover with agricultural crops has altered the river's scenic quality.

[c] Although these roads are beyond the 250-foot protection zone, they are reported to have affected scenic views on part of the river that previously had no logging and appeared remote and wild.

Source: Interviews with state, local, and environmental officials and documents they provided.

With respect to the Florida segment of the Suwannee, recent commercial forestry activities have been reported by The Nature Conservancy[1] as a threat because trees have been harvested along the shoreline and companies are converting natural forests into managed pine plantations (see fig. 2.10). However, a state official told us that except for some small operators, timber operations are consistent with state requirements. A greater threat according to Florida officials, because of its negative impacts on water quality, is the expanded phosphate mining and processing operations in Hamilton County. Although not directly affecting the scenic corridor, state officials note that these operations have seriously polluted two Suwannee tributaries, threatening the study corridor's otherwise high-quality water. Since 1974 the state has been attempting to restrict mining activities, but mining is continuing.

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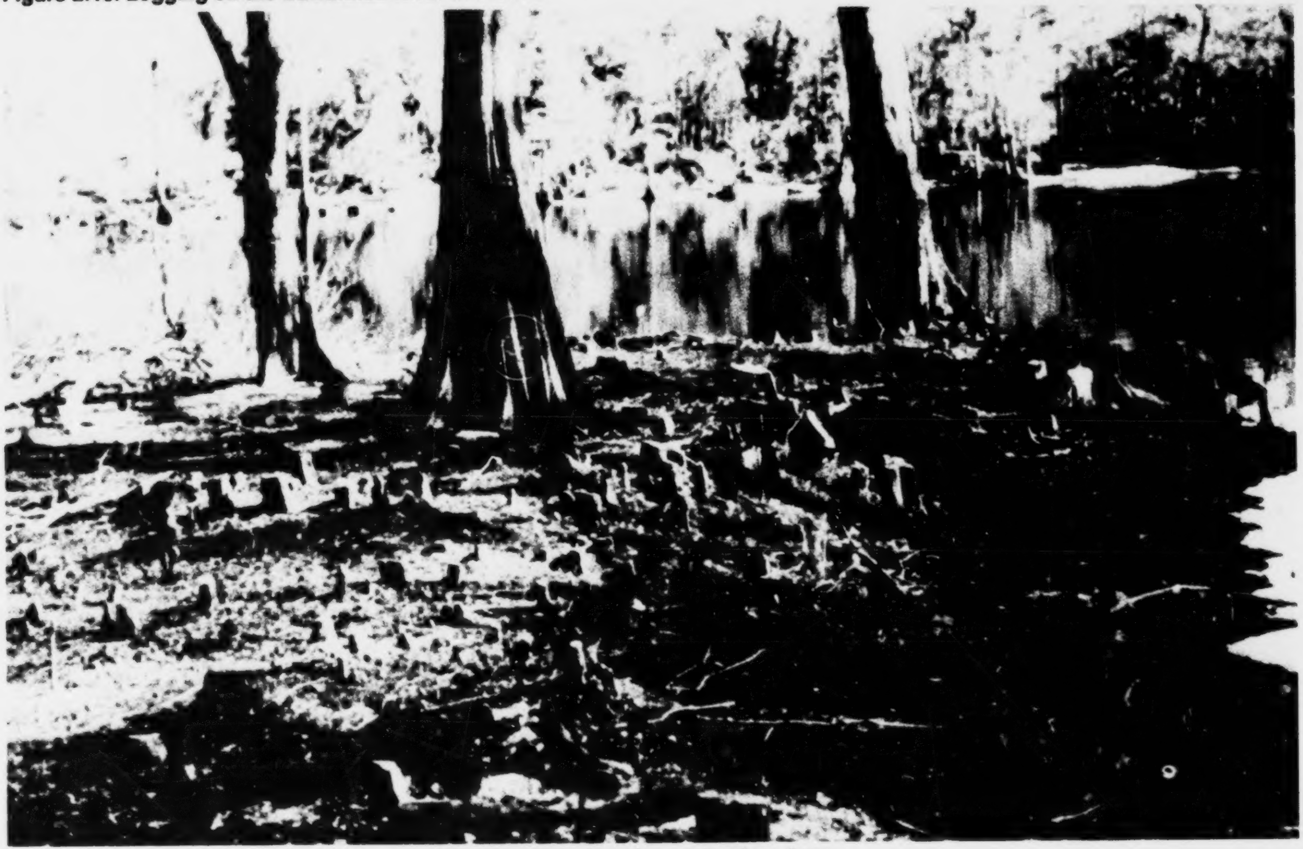
[1] A nonprofit conservation organization involved in preserving lands for their natural values.

Figure 2.10: Logging on the Suwannee River in Florida



Logging not only degrades scenic values, it can also destroy wildlife habitat and worsen erosion of shoreline from floodwaters. State's floodplain regulations now apply limits to timber harvesting within 300 feet of the river.

Source: Suwannee River Water Management District.

With respect to the Maryland segment of the Youghiogheny, the state's wild river regulations have permitted logging on its steeply forested slopes, an activity that was not present when the river was studied. A conservation group has criticized the logging's negative effects on the Youghiogheny's wild river values. In May 1986 we observed some of the areas damaged by logging in the river's previously most remote and primitive sections. According to state officials, because of legal questions about the state's authority to enforce its wild river regulations, the

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state has experienced difficulty controlling logging activities. This situation may improve in the future since a conservation organization and the state plan to acquire lands or scenic easements along the Youghiogheny.

Finally, a coal strip mine that was in operation between 1980 and 1985 was visible from the Youghiogheny in Maryland. Before 1979 this area was within Maryland's designated corridor where coal mining was prohibited by the state's wild river regulations. However, in response to criticism that the corridor was too large, the state revised the boundaries, which allowed this operation to commence. Mining operations ceased in 1985 and the operator has begun replanting the area.

Water Quality Remains a Concern Despite Some Improvements

Although all of the 13 rivers generally had water quality good enough for boating and fishing, 7 had pollution problems at the time they were studied. Individual rivers experienced different problems, but the primary sources of the pollution were inadequate sewage treatment, soil erosion from agricultural practices or fluctuating water levels, runoff from livestock wastes and agricultural fertilizers, and pollution from area mining or manufacturing activities. Water pollution continues as a concern on most of these rivers as well as two others not previously identified as having major problems. The remaining four rivers have retained their good water quality.

Among the seven rivers with identified problems in their respective studies, new sewage treatment facilities have improved water quality on the Gasconade. Improved water quality resulting from new sewage systems on the Youghiogheny in Pennsylvania and the Pine Creek have been at least partially offset by continued acid mine drainage. According to state and local officials, no real improvement has occurred on the Housatonic (which was contaminated with polychlorinated biphenyl [PCB]); John Day (soil erosion and livestock runoff); Upper Iowa (soil erosion and livestock runoff); Wisconsin (industrial waste, agricultural runoff, inadequate sewage treatment); and the Youghiogheny in Maryland (acid mine drainage and raw sewage discharges).

Since the studies were completed, two more rivers now have water pollution problems. As previously discussed, phosphate mining and processing discharges are a major water quality concern on the Suwannee in Florida. Oklahoma officials told us that the Illinois' water quality has decreased because of pollution from several sources to the point that recreation and sport fisheries are jeopardized. The Illinois water pollution problems are considered by state officials to be the major management issue for the river.

On all the rivers with water pollution problems, federal, state, or local efforts have begun that are aimed at correcting the water quality problems threatening the rivers' values. Table 2.4 describes the changes in water quality on the 13 rivers.

Table 2.4: Water Quality Trends Since Federal Study

River	Change in water quality	Considered threat to river's qualities?	Remedial efforts
Buffalo (Tenn.)	No change, remains good	No	None identified
Gasconade (Mo.)	Improved condition in local pollution, overall good	No, except for one upstream area that had preexisting problem	New sewage treatment plants
Housatonic (Conn.)	Preexisting PCB contamination continues	Yes, and resolution will take many years	Federal, state, and local efforts to solve PCB problem
Illinois (Okla.)	Eutrophication, inadequate sewage treatment, other pollution sources	Yes	Interstate and federal efforts to improve sewage treatment and reduce pollution
John Day (Oreg.)	Partially supports anadramous salmon, but turbidity and livestock wastes persist.	Yes	State efforts to reduce soil erosion and livestock wastes
Kettle (Minn.)	Generally improved, but excellent before	No	None identified
Penobscot (Maine)	Remains excellent	No	None identified
Pine Creek (Pa.)	Generally remains good, but problems with acid mine drainage continue	Yes	Upgraded sewage treatment plants; improved septic systems; state efforts to correct acid mine drainage continue
Shepaug (Conn.)	Remains very good	No	None identified
Suwannee (Fla. and Ga.)	Remains generally outstanding, but phosphate pollution has worsened on 2 tributaries	Yes	Federal and state efforts to reduce phosphate pollution

River	Change in water quality	Considered threat to river's qualities?	Remedial efforts
Upper Iowa (Iowa)	Preexisting turbidity and livestock waste pollution persist	No	State efforts to reduce pollution from livestock waste and soil erosion
Wisconsin (Wis.)	Preexisting pollution problems persist	Yes	State's draft management plan addresses water quality improvements
Youghiogheny (Md. and Pa.)	Preexisting problems with mine drainage in both segments persist. Major source of raw sewage in Md. continues.	Yes	Sewage treatment planned in Md. but resolution of various issues needed; Md. plan also calls for resolving acid mine drainage; new sewage treatment in Pa.

Source: Interviews with state, local, and environmental officials and documents they provided.

New Transportation and Utility Developments Have Generally Not Occurred

All of the 13 rivers we reviewed had roads, railroads, powerlines, or gas pipelines crossing or paralleling them when they were originally studied. On the Housatonic, historic bridges benefited public use and enjoyment.

Since the federal studies were done, we learned of no completed transportation or utility developments considered by state, local, and other officials to be detrimental on any of the rivers. In fact, as table 2.5 shows, on the Gasconade and Pine Creek several bridge replacements were made to complement the rivers' natural values and existing traffic patterns. Abandoned railroads along the Housatonic and Youghiogheny in Pennsylvania have also been converted into scenic railway and bicycling/hiking trails.

We identified one proposed road widening and straightening project on the Wisconsin and a possible bridge-widening on the Illinois that state officials consider threats to the rivers' scenic values. According to state officials, the Wisconsin road project may be opposed in the state's river protection plan because of its potential impact on scenic beauty, and the Illinois project has not been funded yet.

Table 2.5: Transportation and Utility Developments Since Federal Study

River	Type of change since federal study	Considered threat to river's qualities?	State/local regulation
Buffalo (Tenn.)	Some scenic bridges replaced	No	None identified
Gasconade (Mo.)	Bridge replacements have improved scenic values	No	None identifed
Housatonic (Conn.)	Abandoned railroad converted to scenic tourist railway	No	None identifed
Illinois (Okla.)	Bridge widening proposed	Yes—minor loss of scenic values expected	None identified
John Day (Oreg.)	Permitted buried gasline and road crossing to parallel existing line and road crossing	No	Oregon Scenic Waterways Program regulates roads and utilities
Kettle (Minn.)	None	No	State regulates utility development
Penobscot (Maine)	No	No	State regulates logging roads and utility crossings in protection districts
Pine Creek (Pa.)	Bridge replacements	No	State adopted task force of local officials' scenic guidelines for bridge replacements.
Shepaug (Conn.)	None	No	None identifed
Suwannee (Fla. and Ga.)	None	No	State agency regulates roads inside floodplain
Upper Iowa (Iowa)	Bridge replacements; power line rerouting; storm-sewer pipes at Decorah	No	None identified
Wisconsin (Wis.)	Proposed widening and straightening of parallel highway	Yes	State draft river mgt. plan addresses project and will try to resolve conflict
Youghiogheny (Md. and Pa.)	Abandoned railroad converted to scenic biking/hiking trail in Pa.	No	Any development inside Pa.-owned lands; Md. restricts road construction

Source: Interviews with state, local, and environmental officials and documents they provided.

Recreational Demands Growing on Several Rivers

When they were studied under the federal wild and scenic rivers act, all of the 13 rivers we reviewed offered outstanding recreational opportunities according to the studies. Popular uses included fishing, canoeing, and white-water rafting and kayaking, as well as hunting and camping in surrounding parks and natural areas (see fig. 2.11). While the studies predicted some of the rivers would grow in popularity, problems with crowds, trespassing, or conflicting recreational uses were not found to be significant except on the Pine Creek, Kettle, Youghiogheny, and Gasconade rivers. The studies did sometimes identify potential problems and recommended management efforts to prevent losses to river values. The Youghiogheny and Pine Creek in Pennsylvania had large enough recreational use to warrant discussions of future planning considerations in the federal studies about controlling use and minimizing impacts on the rivers.

Figure 2.11: Canoeists Enjoying the Lower Wisconsin River in Wisconsin

The lower Wisconsin River draws about 500,000 recreationists each year, including 50,000 canoeists.

Source: Richard Chenoweth, University of Wisconsin-Madison.

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According to state and local officials, 11 of the 13 rivers have seen increased recreational use and 6 rivers now face management problems because of increased recreational demands, as shown in table 2.6. Problems with crowds and conflicts between river users (e.g., anglers, boaters) and private landowners are reported on the Housatonic, Shepaug, Pine Creek, Penobscot, Wisconsin, and Youghiogheny in Maryland. On the Suwannee in Florida, problems exist with campers trespassing on private property; swimmers, divers, and anglers damaging the ecologically sensitive springs; and high-speed boats creating wakes that have eroded the shoreline.

Table 2.6: Recreational Use Trends Since Federal Study

River	Type of increase in recreational use	Considered threat to river's qualities?	State/local regulation
Buffalo (Tenn.)	Canoeing	No	None identified
Gasconade (Mo.)	Fishing, inner tubing	Not yet, but expected to be problem	None identified
Housatonic (Conn.)	Fishing, canoeing, inner tubing, kayaking	Yes—local authority developing plans to correct problems and manage use	State is negotiating with kayaking, commercial canoe rentals to control problems. Public facilities have been added to accommodate use.
Illinois (Okla.)	Canoeing, inner tubing	No—but limits imposed on canoeing	Oklahoma scenic rivers program
John Day (Oreg.)	None	No	None identified
Kettle (Minn.)	Increased use of adjacent state parks and forests	No—some problems noted with trespass and litter but state agencies don't view as a threat	Indirectly—Minnesota manages public-use facilities in state forests and parks along the river
Penobscot (Maine)	White-water kayaking and rafting, camping	Yes	Great Northern Paper Company is planning to address problems
Pine Creek (Pa.)	Trout fishing, canoeing, skiing, snowmobiling, camping	Yes—local concerns that increased use puts unreasonable burden on local people. Locals want the state to include corridor in its wild and scenic rivers program	None identified
Shepaug (Conn.)	Inner tubing	Yes—locals want to direct use away from river and restrict it to shorelands	None identified
Suwannee (Fla. and Ga.)	High-speed boating, public use around sensitive springs in Florida	Yes—boat wakes have eroded shoreline and people have damaged sensitive springs in Fla.	State parks in Florida managed to control people's impact on resources
Upper Iowa (Iowa)	Canoeing, fishing	No	Iowa purchased more lands to improve public access
Wisconsin (Wis.)	Fishing, sandbar camping, canoeing, camping, hunting, beach users	Yes—litter, pollution, noise	Wis. draft river management plan addresses recreation to reduce conflicts
Youghiogheny (Md. and Pa.)	White-water boating on both segments; Pa.—biking, hiking	No—Pa. Yes—Md. draft plan addresses strategies to resolve recreational conflicts	In Pa., state restricts white-water use; Md. draft plan addresses recreation controls

Source: Interviews with state, local, and evironmental officials and documents they provided.

In all cases governments or other groups are attempting to devise strategies for solving these problems and reducing the negative effects on the recreational experience and the rivers' scenic and natural qualities. For example, the state of Wisconsin's river management plan for the Wisconsin makes several recommendations to control crowding among canoeists, reduce litter, and improve hiking, camping, and other facilities. Maryland is addressing how to control the number of people who are permitted to raft or kayak the Youghiogheny's challenging white water in order to reduce conflicts between and among river users and private property owners. Further, problems noted in the study on the Youghiogheny in Pennsylvania have been addressed by a comprehensive recreation management program the state implemented in 1980, according to a state official. (See fig. 2.12.)

Figure 2.12: Recreationists on the Youghiogheny River in Pennsylvania

Located within Pennsylvania's Ohiopyle State Park, the Youghiogheny River attracts 2 million visitors yearly for white water boating, fishing, and other pursuits in the park. Pennsylvania imposed a reservation system in 1980 to control the number of people rafting or kayaking on the river.

Source: Pennsylvania Department of Environmental Resources

Little Interest Shown in Building Water Projects on April 1985 Study Rivers

In addition to reviewing developments on 13 rivers recommended for state and local protection by the President in reports issued between 1972 and 1980, we examined 21 other rivers reported on in April 1985 to determine the extent to which these rivers were experiencing water development project activity. These rivers are listed in table 2.7. Our discussions with officials in the federal agencies that conduct or license such projects and our reviews of associated agency records disclosed little current interest in water projects on 18 of these rivers. We found only one initiated project and two proposed projects on the three remaining rivers.

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Table 2.7: Wild and Scenic Rivers Studies Sent to the Congress in April 1985

River	State(s)
Birch	West Virginia
Bluestone	West Virginia
Cacapon	West Virginia
Colorado	Colorado and Utah
Escatawpa	Alabama and Mississippi
Fish Creek	New York
Gauley	West Virginia
Kanektok	Alaska
Kisaralik	Alaska
Koyuk[a]	Alaska
Loxahatchee[b]	Florida
Melozitna[a]	Alaska
Myakka	Florida
Nolichucky[a]	Tennessee and North Carolina
Obed[c]	Tennessee
Ogeechee	Georgia
Porcupine	Alaska
Situk	Alaska
Snake	Idaho, Washington, and Oregon
Soldier Creek[a]	Alabama
Yukon-Ramparts	Alaska

[a] The National Park Service determined that these rivers were ineligible for the national wild and scenic rivers system. Section 7 (b) of the act provides that the Secretary of the Interior publish notice to that effect in the Federal Register.

[b] In May 1985 the Secretary of the Interior designated 7.5 miles of the Loxahatchee part of the national system at the governor's request under section 2 (a)(ii). The remaining 17.5 miles are not part of the national system.

[c] In October 1976 the Congress designated 45 miles of the Obed into the national wild and scenic rivers system. Further designation of the remaining 55 miles was not recommended.

Concerning the ongoing project, the Bureau of Reclamation is taking steps to reduce the salt load entering the Colorado River in Colorado from existing irrigation canals. The Bureau is lining or placing pipes in the canals that drain into the river. This will reduce the pollution in the river from leached salts, thereby improving water quality. A Bureau official told us that this project will not alter flow conditions or threaten scenic values.

With respect to the proposed projects, hydropower modifications on existing dams are being considered on two West Virginia rivers. First, the city of Summersville, West Virginia, applied to FERC for a preliminary study permit in August 1984 to determine the hydropower potential of the existing Corps of Engineers dam on the Gauley River at Summersville Lake. The proposed 188-megawatt-hour project would consist of three new 11-foot-diameter and 200-foot-long steel penstocks, a new powerhouse with three turbine generators, and an 8.5-mile-long transmission line.

The Interior Department commented on the proposed project and did not object to it on environmental grounds, provided certain comments would be considered under any licensing procedure. In 1983 the city of Summersville filed a license application for the site, but FERC dismissed it in 1984, citing the Gauley's wild and scenic river study status. The act prohibits FERC from issuing such licenses for up to 3 years following the April 1985 transmittal of the wild and scenic river study to the Congress. FERC does not consider the issuance of a preliminary study permit to be a licensing action since no construction is authorized. As a result, the city of Summersville applied for a preliminary project study permit from FERC in August 1984, which FERC granted in August 1986. The city has 24 months to complete its study and will at that time decide whether to proceed with an application for a FERC license.

Second, the Corps is studying whether to modify its Bluestone Dam on the New River in West Virginia to produce hydroelectric power and improve the use of the project. The dam impounds the Bluestone River, which is a tributary to the New, for about 2 miles from its confluence with the New. The Corps is studying several alternatives for the dam that would increase the size of the existing reservoir on the Bluestone. The project reservoir could extend as much as 8 miles further up the Bluestone and inundate more of the New as well. The study is scheduled for completion in fiscal year 1988.

Local Opposition to Federal Designation Remains, but Some Actions Have Been Taken to Protect Rivers

In recent years, states and localities have opposed federal designation and management of new wild and scenic rivers. Such opposition was present on the 13 rivers we reviewed. While opposing federal designation, many states and localities are nonetheless interested in protecting rivers for their natural, scenic, and recreational values. Such interest has manifested itself in varying levels of state and local management attention on the 13 reviewed rivers.

As explained in the studies, the 13 rivers we reviewed were not recommended for designation in the national wild and scenic rivers system largely or in part because of the state or local opposition to direct federal management. We found that this attitude has not changed since the federal studies were completed. State agencies and local officials involved with these rivers did not express interest in federal designation since they still prefer to maintain control. State and local concerns about federal designation included federal land acquisition, imposition of restrictions on private property or public activities in the corridor, and expansion of recreational use that would conflict with local interests and needs.

In lieu of federal protection, state and local governments associated with the 13 reviewed rivers have initiated varying levels of protection efforts. At one end, the Gasconade and the Suwannee in Georgia are not being protected by any state or local program and Tennessee has designated only 7 miles of the 117-mile-long Buffalo River into its state scenic rivers program and does not actively manage or monitor conditions.

On the other rivers, we found variety in the scope and extent of state and local management efforts. For example, six states are currently managing (or preparing management plans for) the Illinois, John Day, Kettle, Penobscot, Wisconsin, and Youghiogheny in Maryland, under formalized scenic river programs. These programs range from active management of resources and regulation of shoreline developments (Kettle, John Day, Penobscot, Illinois, and Wisconsin [under planning]) to land use regulation only (Youghiogheny in Maryland). Local communities and private organizations are more involved in monitoring and protecting resources on the Housatonic and Shepaug rivers than the state of Connecticut. Conservation organizations are also addressing protection issues on the Suwannee in Florida and the Youghiogheny in Maryland.

The state of Iowa had included the Upper Iowa River in its scenic rivers program in 1970, but because of local opposition, the river was removed from the revised river protection program passed in 1984. Today, the state exercises oversight of the Upper Iowa under other regulatory programs, such as water quality. Likewise, the state of Florida has applied several resource protection programs on the Suwannee River, including land acquisition, floodplain land use restrictions, and water quality regulations.

Conclusions

On the basis of information from state, local, and environmental group officials, we learned that the 13 rivers recommended for state or local protection have generally maintained the qualities that originally made them eligible for inclusion in the national system. Most importantly, none of the rivers have been negatively affected by new water development projects that materially changed their free-flowing condition. All but a few have been spared seriously detrimental developments on their shorelines. Four rivers have suffered greater deterioration in at least one of their outstandingly remarkable qualities since their studies were completed. The Suwannee River in Florida has had its water quality and scenic values harmed by phosphate mining activities and proliferating vacation home development along its shore. Logging activities have degraded scenic values on the Youghiogheny River in Maryland, and residential development along the Wisconsin River's tall bluffs threatens scenic values. The Illinois River in Oklahoma now faces serious water pollution problems because of inadequate sewage treatment. Further, specific water quality shortcomings identified as a concern in most of the river studies have in most cases not improved. Finally, because the rivers have retained their outstanding values, they are popular, and recreational pressures are now a concern on six rivers.

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Specific Cost Estimates Not Prepared for All Wild and Scenic Rivers Studies

The act requires the federal agency studying a river for potential designation as a national wild and scenic river to estimate the federal costs of protecting the river if it were to become a part of the national system. These estimates must address both the costs of acquiring lands as well as the cost of administering the area if the river is included in the system. Our review of study reports on 27 eligible rivers that recommended against designation since 1978 disclosed that the degree of compliance with this requirement has been uneven. Reports completed prior to 1982 contained detailed, specific dollar estimates. However, nine reports completed by Interior since 1981 contained no such estimates. Further, we found that 11 of the 27 studies we reviewed included excessive federal costs as a rationale for recommending against the subject river's inclusion in the national system. Of these, eight completed after 1981 did not include detailed cost estimates to support their conclusion.

Specific Cost Estimates Missing in Most Study Reports Since 1981

To facilitate its deliberations on whether a river should be added to the national wild and scenic rivers system, the Congress needs a variety of information. One important component of this information is an estimate of how much it would cost the federal government to add the river to the system. Accordingly, the act directs federal agencies conducting congressionally mandated river studies to develop and report such estimates.

We determined, however, that of the 27 river studies sent to the Congress since 1978 that found the rivers eligible for designation but nonetheless recommended against it, 9 studies did not include specific information that would inform the Congress about the estimated costs to the federal government of designating the rivers. Table 3.1 lists all 27 studies, the date the study was completed, the preparing agency, and the estimated cost of adding the river to the national system when a specific cost estimate was prepared.

Table 3.1: Cost Estimates in River Studies Completed Since 1978 and Sent to the Congress Recommending Against National Designation

Thousands of dollars

Study river (date to Congress)	Completed	Preparing agency	Estimate federal costs
October 1979			
Buffalo	May 1978	Interior	$2,896
Pine Creek	Aug. 1978	Interior	$457
Youghiogheny	Sept. 1978	Interior	$2,540
Wisconsin	Jan. 1979	Int./Ag.	$1,588
Housatonic	Aug. 1979	Interior	$0[a]
Illinois	Aug. 1979	Interior	$9,104
Kettle	Aug. 1979	Interior	$580
Shepaug	Aug. 1979	Interior	$1,000
February 1980			
John Day	Sept. 1979	Interior	$54
September 1982			
Salt	Apr. 1981	Agriculture	$2
San Francisco	Apr. 1981	Agriculture	$705
April 1985			
Colorado/Dolores[b]	Sept. 1979	Interior	$2,860
Snake[b]	Feb. 1980	Interior	$1,501
Obed[b]	Dec. 1981	Interior	$16,000
Cacapon[b]	Sept. 1982	Interior	no estimate
Fish Creek[b]	Nov. 1982	Interior	no estimate
Birch[b]	Aug. 1983	Interior	no estimate
Bluestone	Aug. 1983	Interior	no estimate
Gauley[b]	Aug. 1983	Interior	no estimate
Situk	Nov. 1983	Agriculture	$0[c]
Ogeechee[b]	May 1984	Interior	no estimate
Escatawpa[b]	June 1984	Interior	no estimate
Yukon[b]	June 1984	Interior	no estimate
Myakka[b]	July 1984	Interior	no estimate
Kanektok	Aug. 1984	Interior	$0[c]
Porcupine	Sept. 1984	Interior	$0[c]
Kisaralik	Sept. 1984	Interior	$0[c]

[a] Federal designation and associated cost estimates were not presented. The report analyzed the cost to the state of Connecticut to protect the river ($895,000).

[b] These river studies used federal costs as one reason for recommending against federal designation.

[c] These four rivers, all in Alaska, flow almost completely within federal lands and therefore were not estimated to cost any extra if made a part of the national system.

Source: Departments of the Interior and Agriculture study reports and related correspondence, as compiled by GAO.

As table 3.1 demonstrates, studies completed before 1982 presented specific estimates of the federal costs of protecting a river. As an example, the study on the Pine Creek in Pennsylvania reported that for the federal government to protect the river, 500 acres costing $180,000 and 10 seasonal homes costing $120,000 would need to be acquired and 8 public recreational sites costing $157,000 and requiring $23,000 a year in maintenance would need to be developed for a total of $480,000. Another example involves the San Francisco River in Arizona where the study team estimated the costs of four options for protecting the river (covering different sections of the study corridor). Estimated costs ranged from $0 for a segment totally within national forest land to $705,000 for the longest segment that would require acquisition of scenic easements on 845 acres of private land along the complete length of the study river.

For the 12 Interior studies completed in 1982 and later,[1] however, the agency has given far less attention to cost estimates, with 9 studies containing no specific estimates at all. The other three studies were of rivers that flowed almost completely within federal lands. In these three cases the associated studies reported that no extra federal costs would be incurred if the rivers were included in the national system.

Our review also disclosed that 11 of the 27 study reports included high federal costs among the reasons for recommending against including the subject river in the national system. Even in these instances, we found that specific cost estimates were not prepared in eight cases. In these cases—involving the Yukon in Alaska; the Gauley, the Cacapon, and the Birch in West Virginia; Fish Creek in New York; the Ogeechee in Georgia; the Myakka in Florida; and the Escatawpa in Alabama and Mississippi—the studies (all completed after 1981) noted that most of the lands adjoining the rivers were privately held making necessary the extensive acquisition of lands or scenic easements. While claiming or inferring that such acquisitions would be "expensive," the studies did not quantify these costs with specific estimates.

We discussed the omission of specific cost estimates in recent study reports with Interior Department officials from the National Park Service. They told us that in each case where no specific cost estimate was prepared, the study team concluded early on that strong local opposition made it highly unlikely that the subject rivers could ever be included in the national system. Accordingly, the teams decided that expending money and staff time necessary to prepare specific estimates of the cost of adding the river to the national system was not prudent. Department officials also told us that analyzing potential federal land acquisition costs in these cases would unnecessarily alarm local and state interests and thus lead them not to seek federal technical assistance to state and local governments for river protection.

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[1] One additional study completed since 1982 was prepared by the Department of Agriculture. The Situk River study contained a specific cost estimate for federal designation.

Conclusions

In studies completed since 1981, the Interior Department has not given the Congress the kind of detailed cost information that would enable them to reasonably evaluate all the alternatives and make a final decision. Interior officials told us that in some cases, preparing cost estimates was not prudent because local opposition made the rivers' inclusion in the national system unlikely. Eleven of 27 rivers were not recommended for designation because of excessive federal costs even though Interior had no specific estimates in 9 studies to support its position. We believe, however, that the study's analysis of river management alternatives, including costs, is necessary in order to examine the feasibility of federal and nonfederal action to protect a river's resources. Various pieces of information about rivers are required by the act since the information provided by a study is used by the Congress in its consideration of making a river a component in the national wild and scenic rivers system.

Regardless of the reasons, we believe that by omitting the estimates, Interior has prejudged a decision that is the Congress' to make. The study team should develop and provide all the information required by the Congress to reasonably evaluate all the alternatives and make a final decision. The act makes it clear that cost estimates are an important element in the decision-making process.

Recommendation

The Secretary of the Interior should ensure that future wild and scenic river studies transmitted to the Congress contain specific estimates of potential federal land acquisition and management costs of adding a study river to the national system.

Buffalo River, Tennessee—Summary of Development

Background

The federal wild and scenic river study found the 117-mile, north-flowing Buffalo River qualified for the national system, classifying a 73-mile scenic segment and a 44-mile recreational segment.[1] The Buffalo was considered by the study as one of Tennessee's most outstanding pastoral streams, flowing through steep bluffs, forested rolling hills, pasture, and cropland with a remarkably undeveloped shoreline. Water quality was exceptionally high and flow levels were adequate for recreation even during dry periods when most other streams of the region were too low to be used.

The Tennessee General Assembly passed the Tennessee State Scenic Rivers Act in April 1968, designating the Buffalo as a state scenic river. Soon after, landowner opposition to the state system led to exclusion of all but the Lawrence County portion of the river (about 7 miles of the headwaters). In February 1970, Tennessee formally requested a joint federal-state study of the Buffalo, which had been authorized in 1968 but not yet started by the federal study agency. The joint study got underway in 1973. Public information meetings were held throughout the early 1970's, at which local landowners voiced strong opposition to either federal or state designation of the Buffalo. The main issues raised were fear of uncontrolled recreational use and encroachment on individual rights. As a result the federal study recommended that the river be preserved, protected, and managed by state and local governments, in accordance with the governor's wishes expressed to the Secretary of the Interior in March 1977. The possibility of Tennessee seeking a section 2(a)(ii) designation was left open.[2] The President concurred with this recommendation in his transmittal of the study report to the Congress in October 1979.

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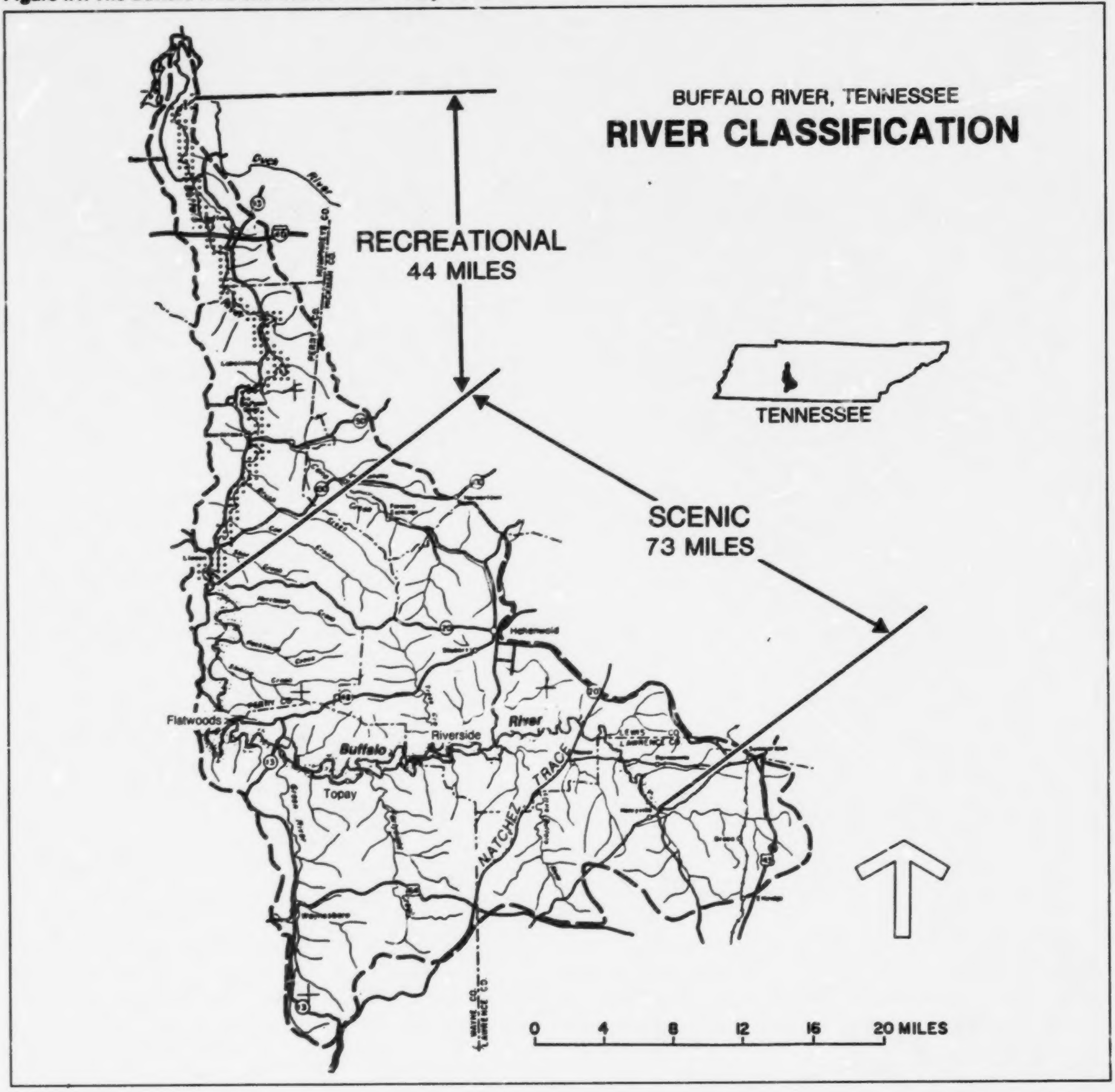
[1] Study authorized—Oct. 1968; study conducted by the Heritage Conservation and Recreation Service, Department of the Interior, and completed—May 1978; study sent to the Congress—Oct. 1979.

[2] Section 2 (a)(ii) of the Wild and Scenic Rivers Act (Public law 90-542) allows the Secretary of the Interior to designate state-administered rivers as components of the national wild and scenic rivers system at the request of a governor.

Figure I.1: The Buffalo Wild and Scenic River Study Corridor


BUFFALO RIVER, TENNESSEE
RIVER CLASSIFICATION
RECREATIONAL
44 MILES
SCENIC
73 MILES
TENNESSEE
Duck River
Hohenwald
Flatwoods
Riverside
Buffalo
River
Topay
NATCHEZ TRACE
0
4
8
12
16
20 MILES

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State Protection Efforts

Tennessee's scenic rivers program is administered by its Department of Conservation. According to current and former department officials, however, the department traditionally has not received enough funding from the state legislature and administration. As a result, the assistant planning director, Division of State Parks, told us that the department does not actively manage or monitor the 7-mile segment of the Buffalo remaining in the system.

In October 1984 the department commissioner appointed an advisory commission to study the state's scenic river protection and management efforts. The commission found that citizen involvement and improved public perceptions of the state's intent were needed to produce a strong program and made recommendations. The assistant planning director stated that increased state support for the program is needed to implement the recommendations. For example, two new administrators have been requested for the program, with further possible staff increases in the future. He also stated that the department will focus more on education about the need for river conservation and provide technical assistance to local and conservation groups in which interest in river management is expressed. This new approach results from landowner efforts to dedesignate scenic rivers that the department had attempted to manage.

Status of Developments

To obtain information on developments along the Buffalo River study corridor, we interviewed by telephone current and former Tennessee Department of Conservation officials. We spoke with the scenic rivers program administrator; the assistant planning director, Division of State Parks; and a former department geologist. We also interviewed the president, Tennessee Citizens for Wilderness Planning, and the president, Tennessee Scenic Rivers Association. We obtained information from them on the current condition of the river corridor and on the state's river management objectives. Further, we obtained information on water projects, water quality, and mining activities from other federal and state sources.

Water Projects

At the time of the federal study, the Buffalo was free of impoundments. This condition has not changed since the study was completed. The federal study concluded that the need for flood control, water supply, or other such water projects was "non-existent." The study noted that the Corps of Engineers had identified a damsite downstream of the Buffalo's confluence with the Duck River, which would impound about 14 miles of the Buffalo. However, the chief environmental analyst in the Corps' Nashville District Office told us that this potential site is not under active consideration.

Contact with the Soil Conservation Service (SCS) revealed a preauthorization plan for flood control on the Pond Creek watershed.[3] According to the assistant state conservationist for water resources, SCS anticipates submitting a request for planning authorization by January 1987, then will design and build the project between 1989 and 1990. The Pond Creek watershed is very small and shares a floodplain with the Buffalo near its confluence with the Duck (recreational segment). The project proposes building some small dams and diversion structures for flood control in the watershed, but the official stated that the structures would have no effect on the Buffalo's values.

We did not find other evidence of any water projects within the Buffalo watershed in checking with federal and state agencies.

Shoreline Development

The study noted that the shoreline was remarkably undeveloped along the scenic segment, while the recreational segment had a few communities and intensive farming. Since the study was completed, surprisingly little change in shoreline development is reported to have occurred by knowledgeable officials.

The federal study noted a trend toward nonresident ownership that could lead to increasing waterfront residential development by private investors and developers. However, according to two officials, these pressures have not yet materialized. The president of the Tennessee Scenic Rivers Association stated that the shoreline remains undeveloped. The former department geologist confirmed this.

Water Quality

At the time of the study, the Buffalo's water was notably clear and unpolluted. We found that the river's water quality has remained very good since that time. Potential threats to water quality noted in the study included possible sand and gravel mining operations adding to the silt load, erosion from agriculture and timber-clearing practices, and detectable but insignificant chemical, physical, radioactive, and bacterial pollutants.

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[3] Preauthorization means that the project has not yet been authorized for planning. Eventual construction of the project depends upon interest, feasibility, and funding.

Various officials, including the Tennessee Scenic Rivers Association president and a former department geologist, indicated that water quality remains high and no significant problems have occurred from erosion or siltation. Edible mussels, which are extremely sensitive to pollutants, are still present in the Buffalo. A chemist with Tennessee's Water Pollution Control Board said that he uses Buffalo river water samples as a benchmark to measure purity in other rivers. Prior to 1980 the Buffalo had about 20 water quality monitoring stations. Today, only one exists, because of federal budget cutbacks.

Roads and Utilities

The study indicated that the Tennessee Department of Transportation had plans to improve three road approaches and crossings on the Buffalo, which would result in the removal of three old bridges enhancing the river's scenic quality. The Tennessee Scenic Rivers Association president told us that the few new bridges on the Buffalo do not detract from scenic values. Some old bridges remain.

Recreational Use

As stated in the study, high water quality and sufficient flow gave the Buffalo outstanding recreation potential. Limited access and lack of public facilities were cited as factors limiting recreational use, but recreational pressures were expected to increase.

The department's scenic rivers program administrator, the Tennessee Scenic Rivers Association president, and a chemist with the division of water pollution control indicated that recreational use has increased substantially in recent years. The Buffalo now supports many commercial canoe rentals. Most are located around Flatwoods, and the river in that area and downstream becomes fairly crowded on summer weekends. These officials expressed conflicting opinions, however, on whether increased use is a problem. Some officials stated that they had heard of concerns about overcrowding on the river. The president of the Tennessee Scenic Rivers Association stated that use has increased but has not affected river values. None of the officials indicated that any problems existed other than crowding. The lack of public access and recreational facilities, however, continues to limit recreation potential. For example, the Tennessee Scenic Rivers Association president said that his organization must make campsite arrangements with individual landowners because no public facilities are available.

Resource Development

The study noted that erosion from agricultural practices and cattle, lack of timber management, and sand and gravel extraction posed potential threats to the Buffalo. The information that we received from Soil Conservation Service officials, the Tennessee Scenic Rivers Association president, and the state's water pollution control division indicates that erosion has not worsened since the study was completed and that little, if any, timbering and sand and gravel extraction is occurring.

Summary

Although the river corridor is not actively managed for scenic river protection, little seems to have changed on the Buffalo River since 1978, according to state and recreation group officials. Little or no shoreline and resource development has occurred and water quality remains high. Increased recreational pressures generally are not considered to detract from the Buffalo's natural and scenic values. We identified one planned and yet-to-be-authorized flood control project on a tributary in the recreational section, which reportedly will not affect the river's values.

Of the 117-mile study segment, only 7 miles are designated under Tennessee's Scenic River Act. The designated segment is not managed or monitored because of lack of staff in the state agency. However, staff may increase in the future as a result of an advisory committee's recommendations issued in December 1985.

Gasconade River, Missouri—Summary of Development

Background

The federal wild and scenic river study of the north-flowing Gasconade and its major tributaries concluded that a total of 222 miles of the Gasconade and Big Piney rivers qualified for the national system.[1] Sixty-six miles of the Gasconade and 52 miles of the Big Piney were classified as scenic. Two other segments, totaling 104 miles, on the Gasconade were classified as recreational.[2] The study noted that the area through which the Gasconade and Big Piney flowed was characterized by spectacular bluffs, caves, and springs and was considered one of the more rugged and scenic areas in Missouri. The rivers offered a high-quality recreation experience.

According to the federal study, for a number of years prior to the federal study, the state of Missouri made various efforts to establish a state wild and scenic rivers system. Each effort was rebuffed, however, largely as a result of opposition by potentially affected landowners. Consequently, when the federal study on the Gasconade was initiated, the study team considered citizen involvement to be crucial. At public information meetings, the local citizens expressed concerns about infringement on property rights and excessive recreational use if the Gasconade study corridor were included in the national system. The study, therefore, recommended that the local citizens be responsible for managing the recreational segments in conjunction with local, state, and federal programs and that the scenic segments (a large portion of which flowed through a national forest) be managed by the federal government.

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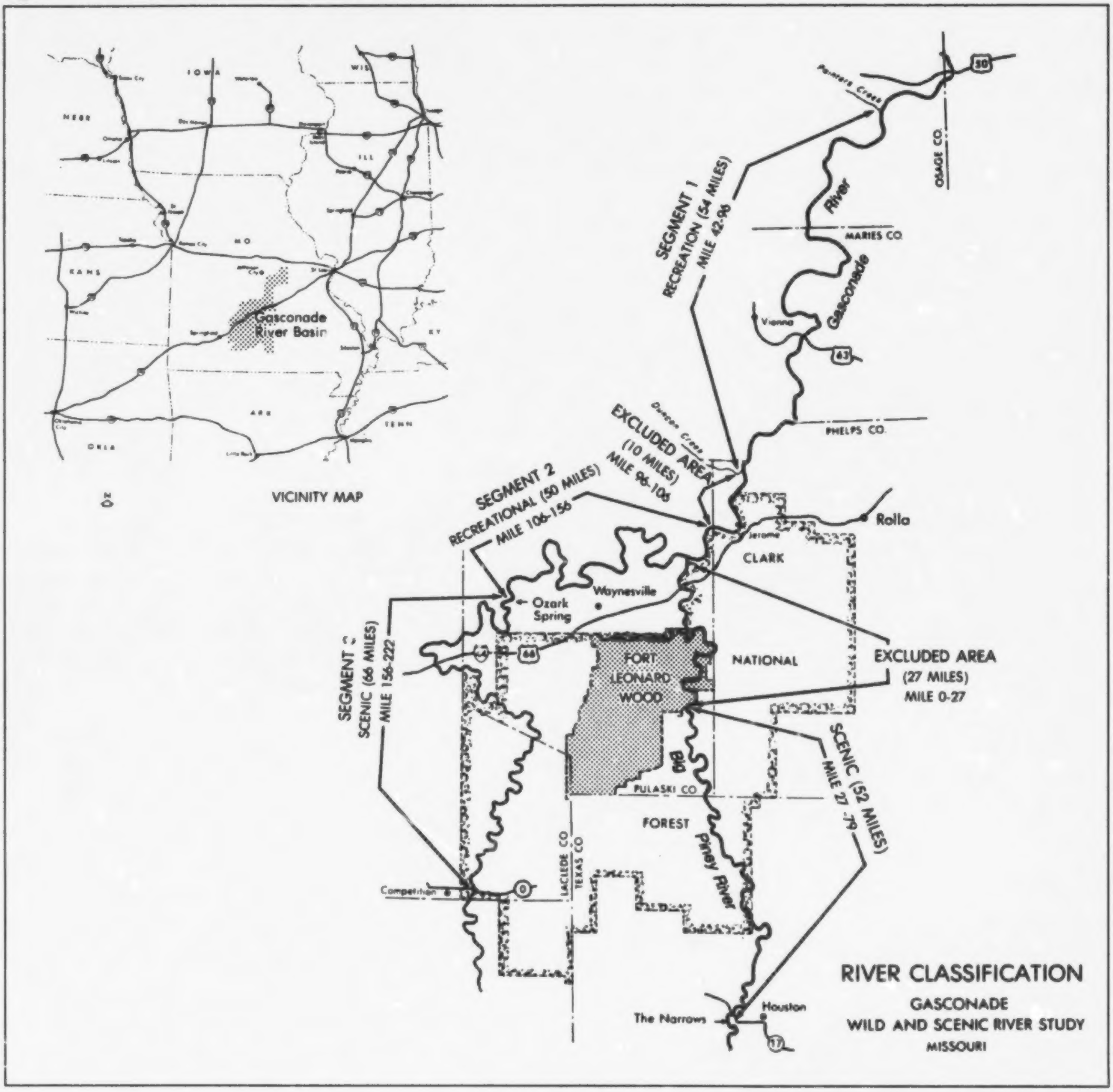
[1] Study authorized—Oct. 1968; study conducted by the Bureau of Outdoor Recreation, Department of the Interior, and completed— June 1975; study sent to the Congress—May 1977.

[2] A 10-mile segment of the Gasconade and a 27-mile segment of the Big Piney did not qualify because of excessive development and impoundments.

Figure II.1: The Gasconade Wild and Scenic River Study Corridor


IOWA
NEBR
WIS
ILL
MO
KANS
KY
ARK
TENN
OKLA
Gasconade River Basin
VICINITY MAP
N
50
Painters Creek
OSAGE CO.
SEGMENT 1
RECREATION (54 MILES)
MILE 42-96
River
MARIES CO.
Gasconade
Vienna
63
Duncan Creek
EXCLUDED AREA
(10 MILES)
MILE 96-106
PHELPS CO.
SEGMENT 2
RECREATIONAL (50 MILES)
MILE 106-156
Rolla
Jerome
CLARK
Waynesville
Ozark Spring
66
FORT LEONARD WOOD
NATIONAL
EXCLUDED AREA
(27 MILES)
MILE 0-27
SEGMENT 3
SCENIC (66 MILES)
MILE 156-222
SCENIC (52 MILES)
MILE 27-79
Big
PULASKI CO.
FOREST
Piney River
LACLEDE CO.
TEXAS CO.
Competition
O
Houston
The Narrows
17
RIVER CLASSIFICATION
GASCONADE
WILD AND SCENIC RIVER STUDY
MISSOURI

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The study recommendations encountered substantial opposition from the local citizens and county governments. The governor of Missouri also rejected the study recommendations citing opposition by local landowners, officials, and civic leaders. He indicated that an official state policy designating the Gasconade and the Big Piney as natural streams would be sought. Consequently, the Department of the Interior recommended state protection instead of federal designation when it transmitted the study to the President.

State Protection Efforts

To date in spite of earlier state intentions, Missouri has not instituted a scenic rivers program. The state monitors water quality in the Gasconade and the Big Piney and maintains access points, but no management plan or zoning exists. Substantial local opposition to river protection programs still exists.

Missouri has, however, undertaken recent movements toward river protection. The Missouri Department of Natural Resources' Division of Parks, Recreation, and Historic Preservation proposed in May 1986 protecting outstanding water resources through water quality regulations. The proposal may be considered in 1987 as part of a periodic water quality regulations review, according to the division's director of administration. In addition, he told us that a scenic corridor had been established in 1983 on the Meramec River for resource protection purposes. The director expressed optimism about the outstanding-water resources proposal and believed that success on the Meramec River may help quell local opposition to similar steps in other areas of the state.

Status of Developments

To obtain information about developments along the Gasconade River study corridor, we interviewed by telephone the staff officer, Mark Twain National Forest (formerly Clark National Forest), U.S. Forest Service; the Missouri Department of Natural Resources' director of administration and a planner for the Division of Parks, Recreation, and Historic Preservation; and the Missouri Department of Conservation's environmental services supervisor for planning. In addition, we contacted the department's planning chief, Water Pollution Control Program and reviewed the 1984 Missouri Water Quality Basin Plans for information on water quality. We also reviewed documents provided by these officials to identify current and projected conditions along the rivers. We obtained information from other federal agencies on water projects and water quality in the area.

Water Projects

The federal study noted that the only impoundments on the rivers were two water supply reservoirs on a 27-mile segment of the Big Piney, which was found to be unqualified for the national system as a result. We identified no new water projects on the Gasconade corridor since the federal study had been completed. The federal study had mentioned pending deauthorization of two Corps of Engineers reservoirs on the Gasconade. Information that we obtained from the Corps indicates that the projects were deauthorized in 1977 and no other water projects are pending in the area.

Shoreline Development

The federal study team characterized the Gasconade River area as rural farm and forest, with ample streambank vegetation to screen developments. Thirty-six miles of the Big Piney and 34 miles of the Gasconade flowed through the Mark Twain National Forest. The information we obtained indicates that shoreline conditions have changed very little since the study was completed. However, the federal study considered shoreline development one of the potential threats to the streams' unique qualities, and this remains a concern today. Housing construction was increasing in the early 1970's, and the study team predicted that recreational homesites would be developed, especially along the more isolated areas.

Various officials stated that the shoreline remains in much the same condition as when the study was completed in 1975, but we found indications from a state study[3] that this may change. On the one hand, the population has remained steady and no pressures reportedly exist to expand communities. The area is still mostly rural farm and forest. The Mark Twain National Forest staff officer told us that land prices in the corridor are quite low and a lot of land is for sale. However, rather than being subdivided for residential development, he said that the land is sold for continued agricultural use.

The local landowners, however, are still very much opposed to land use zoning, and the counties bordering the Gasconade and Big Piney do not have such controls. Further, in 1982, Missouri's Departments of Conservation and Natural Resources surveyed the status of Missouri watersheds. The survey found that the state's natural resource managers believed that shoreline development would become a major problem on both streams in the future.

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[3] "Ranking the Recreational Values and Associated Problems of Missouri's Major Watersheds," Missouri Department of Conservation and Department of Natural Resources, Oct. 1982.

Water Quality

At the time of the study, water quality in the Gasconade and Big Piney was good to excellent, but some problems were encountered that the study team suggested could affect river values in the future unless corrective measures and controls were established. We learned from state officials that although water quality has improved since the federal study, certain concerns still remain. According to the federal study, the most significant threats to water quality were municipal and industrial wastes, soil erosion, and gravel dredging. Agricultural practices also raised concern and a toxic waste spill had severely polluted an 8-mile upstream section of the Big Piney. These water quality problems threatened the recreational experience downstream.

The planning chief of the water pollution control program reported that new sewage treatment plants in some of the towns above the Big Piney's scenic segment had greatly improved water quality since the federal study had been completed. In addition, the 1984 Missouri Water Quality Basin Plans reported that the Gasconade and the Big Piney were clean enough for drinking water, swimming, and wading. The basin plan reported that the Gasconade was not polluted, while some pollution sources on the Big Piney were outside of and did not affect the federal study corridor.

Concerns were raised, however, by other sources about water quality on the Gasconade. A Department of Conservation official told us that, although Missouri's water quality standards are good, enforcement could be pursued more vigorously. In addition, the 1982 Missouri watersheds survey revealed that state natural resource managers considered pollution of the Big Piney to be its most significant problem and expected it to become severe in the future.

Roads

The federal study noted that a possibility existed that some existing roads would be relocated, resulting in a deterioration of river values, and that some crossings would be improved. Since the federal study was completed, some bridge improvements have been made, enhancing scenic values. The staff officer at Mark Twain National Forest told us that the Interstate Highway 44 crossing has been replaced, improving aesthetic values. When the bridge was replaced, a number of unsightly buildings around the bridge were torn down. In addition, the new bridge is considerably higher than the old one and spans the river without the supportive pilings needed for the old one. No other changes in roads were identified.

Recreational Use

According to the federal study, the Gasconade and Big Piney rivers offered a variety of high quality recreational experiences. Deep water pools provided sufficient flow for floating even in extreme droughts and the Big Piney was one of the best fishing streams in the state. The springs, caves, and bluffs were noted as important scenic and recreational resources. The study noted that recreational use was increasing on both rivers and recommended controls on future recreation demands to prevent loss of river values. The caves were particularly vulnerable to vandalism. We learned from state and federal officials that recreational use has grown since the federal study, and though not a major problem yet, some of the concerns raised by the federal study remain.

According to state and federal officials, recreational use has increased, but this is not now seen as a threat to the rivers' values. A Department of Conservation official said the state has 20 public recreational access sites, increasing from 15 since 1975. He also believes that while the number of recreationists is large, the density of use is acceptable to most users and that a good quality recreation experience is still available. The Mark Twain National Forest official and a state water pollution control official agreed that recreational overuse is not yet a problem, in spite of the increase. The Big Piney remains one of Missouri's best fishing streams.

However, we learned that conditions may change. The 1982 watersheds survey indicated that the Gasconade and the Big Piney both ranked in the state's top 10 recreational watersheds. Intensive recreational use was cited as a major problem for both rivers, and respondents predicted that it would become worse.

The caves, which were considered an outstanding scenic and recreational resource by the federal study, are still vulnerable to vandalism according to a Department of Conservation official, and certain unique areas noted in the study as good candidates for management have not been placed under state ownership.

Resource Development

The federal study noted a trend toward increased timber clearing in the area to convert forest to pasture land for livestock grazing. Officials told us that this trend has been halted because of the depressed farm economy, particularly for cattle. Further, a state water quality official did not think timbering had any negative effects, such as soil erosion, on the Gasconade or Big Piney. He told us that although the state does not prevent the conversion of forest to pasture, the Department of Natural

Resources asks landowners to leave a screen of trees along the river banks to prevent erosion. According to the official, they usually succeed in obtaining cooperation.

Summary

Although not being actively managed by state or local governments for scenic river protection, the Gasconade and Big Piney are in much the same condition today as in 1975, according to state and federal officials. Two Corps reservoir projects were deauthorized. Water quality and shoreline development appear to be holding steady for the time being, but they are still a significant concern for the future. Recreational use has increased and may become a problem in the future. Missouri lacks a scenic rivers program, which might control development, recreation, and pollution, and the local landowners are still strongly opposed to zoning. One official with whom we spoke believed that some resource protection strategies (although not an actual scenic rivers program) may be enacted in the future that could address the study corridor.

Appendix III

Housatonic and Shepaug Rivers, Connecticut—Summary of Development

Background

Separate wild and scenic river studies found that parts of the Housatonic River and its tributary, the Shepaug River, qualified for inclusion in the national system.[1] Twenty-one miles of the Shepaug River and 5 miles of its tributary, the Bantam River, were classified as scenic because of their accessible but largely undeveloped valley. Forty-one miles of the Housatonic River were classified into one scenic segment separating two recreational segments. Both rivers were found to possess several outstandingly remarkable values, among them highly diverse scenic qualities representative of New England charm, rich historical reminders of the area's native American and colonial past, a full range of recreational opportunities, and unique wildlife and plant habitats.

In accordance with the wishes of the local communities along both river corridors, the studies recommended that they be protected by local and state actions rather than federal control. Specifically, both studies recommended that local townships bordering the corridors be responsible for preparing and implementing comprehensive management plans for conserving the areas. Further, if federal scenic river designation were desired, then local townships' management plans should lead to state recognition and legislation as state scenic rivers administered by local authority and the governor's request for national designation under the act's 2(a)(ii) process. The President concurred with these recommendations in transmitting the report to the Congress.

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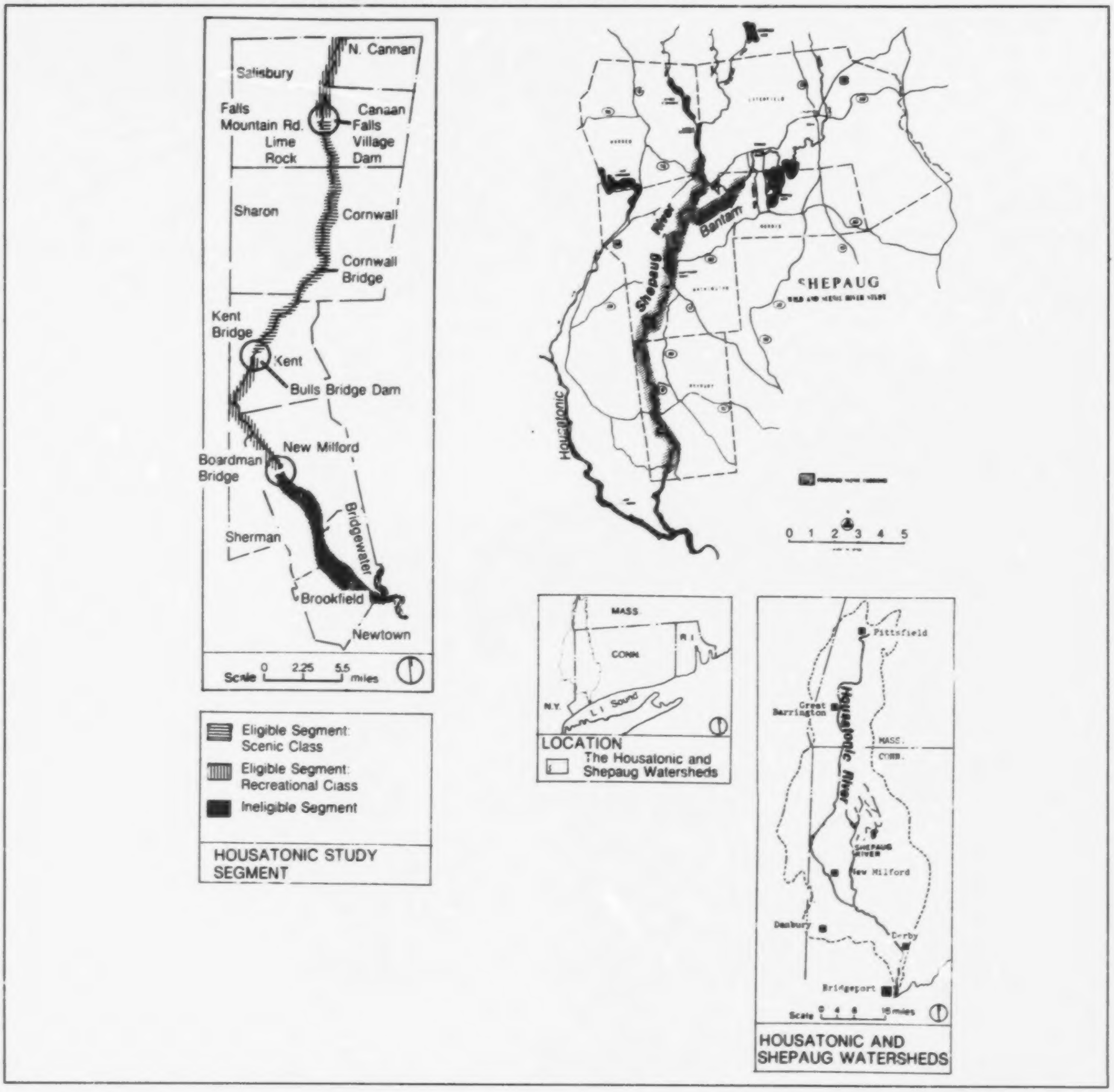
[1] Studies authorized—Oct. 1976 (Housatonic), Jan. 1975 (Shepaug); studies conducted by the Heritage Conservation and Recreation Service, Department of the Interior, and completed—Aug. 1979; studies sent to the Congress—Oct. 1979.

Figure III.1: The Housatonic and Shepaug Wild and Scenic River Study Corridors


N. Cannan
Salisbury
Falls Mountain Rd.
Canaan Falls Village Dam
Lime Rock
Sharon
Cornwall
Cornwall Bridge
Kent Bridge
Kent
Bulls Bridge Dam
New Milford
Boardman Bridge
Bridgewater
Sherman
Brookfield
Newtown
Scale 0 2.25 5.5 miles
Eligible Segment: Scenic Class
Eligible Segment: Recreational Class
Ineligible Segment
HOUSATONIC STUDY SEGMENT
Shepaug River
Bantam
Housatonic
SHEPAUG
0 1 2 3 4 5
MASS.
CONN.
R.I.
N.Y.
L.I. Sound
LOCATION
The Housatonic and Shepaug Watersheds
Pittsfield
Great Barrington
Housatonic River
MASS.
CONN.
Shepaug River
New Milford
Danbury
Derby
Bridgeport
Scale 0 4 8 16 miles
HOUSATONIC AND SHEPAUG WATERSHEDS

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Local and State Protection Efforts

The local townships began cooperative planning for both the Housatonic and Shepaug rivers in direct response to the federal scenic river studies, which were seen as a threat to local control and autonomy in the region. The towns approved the formation of permanent river commissions (the Housatonic River Commission and the Shepaug-Bantam River Board) and adopted proposals to amend local zoning regulations and other recommendations for recreational-use planning, water quality, and land preservation. Since 1979 the river commissions have made progress toward implementing cooperative controls for protecting both corridors. Their proposed river management plans were approved by the local townships, and the townships along the Housatonic River adopted recommended zoning ordinances to control land use. The Shepaug-Bantam River Board expects its townships to adopt recommended zoning rules soon.

In 1984 Connecticut enacted its River Protection Commissions Act, which formalized the local approach for river protection being applied on the Housatonic and Shepaug. The act recognizes established river conservation commissions to be responsible for defining river corridor boundaries, inventorying resources, and developing and implementing river management plans. A river commission would apply to the Connecticut Department of Environmental Protection for state designation as a "protected river corridor" and would submit its proposed management plan for the state's approval. In deciding on designation, the department must consider, among other factors, the interests of the state and local agencies affected by the river management plan. Once approved by the state, the river commission is authorized to review and make recommendations on proposals affecting the corridor received by local land use zoning and planning, flood and erosion control, sewer, and water pollution control authorities.

The state is also required to consider the river management plans when it considers proposals for activities affecting the corridor, such as construction projects, wetland and watercourse encroachments, solid and hazardous waste disposal, dredge and fill, water diversions, sand-and-gravel mining, dams, and discharges.

Present Status

The Housatonic River Commission applied to the Connecticut Department of Environmental Protection for designation and approval of the Housatonic River Management Plan in 1985. Although the department did not approve the proposed management plan, it designated the river corridor as protected under the state law subject to the understanding that none of the law's regulatory constraints on the state are imposed until a revised management plan is submitted and approved. According to a department official, the plan was disapproved in part because it recommended prohibiting future activities, in conflict with the state's policies and programs. For example, the plan recommended not allowing larger campsites at state parks on the corridor unless clear need was demonstrated and not providing more sites for public fishing access. The commission's chairman told us that it is revising the management plan for resubmission to the state by early 1987. In the meantime, he said the commission continues its advisory role, commenting at local and state levels on proposed activities (zoning matters, state water quality classification, etc.) affecting the corridor.

The Shepaug-Bantam River Board has not yet submitted a designation application or river management plan to the state. However, it is now in the process of inventorying and mapping the corridor's special interest areas and updating the management plan prepared in 1979 to submit to the department to gain state protection, probably by 1987.

Status of Developments

In order to obtain information on developments along the Shepaug and Housatonic river study corridors since the federal study had been completed, we interviewed by telephone the chairmen of both river commissions; the past chair of the Shepaug-Bantam River Board; and the executive director of the Housatonic Valley Association.[2] We also interviewed officials in the Department of Environmental Protection's Parks and Recreation Division about the state's scenic river commission program, specifically for matters relating to the Housatonic and Shepaug river corridors. To find out more about water and road projects affecting the corridors, we interviewed officials from Northeast Utilities Company, the department's Water Resources Board, the Department of Health Services, and the Department of Highways. We also contacted FERC, the Corps of Engineers, and SCS to identify any water projects they had considered. We obtained documents to provide additional information on development.

Water Projects

The federal studies concluded that both river corridors met the free-flowing criteria needed to qualify for the wild and scenic rivers system, although existing water projects affected them. Since the federal studies were completed in 1979, we found that several changes are completed or underway concerning water projects on both rivers. However, we were told that with one exception (a possible water supply project on the Shepaug), these changes generally do not pose major problems for the rivers' values.

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[2] The association was founded as a nonprofit corporation to promote the conservation of the Housatonic River valley's natural environment. Activities include addressing water quality issues, reviewing and commenting on land uses, such as subdivision plans, and land trust and land use planning services.

Although the Housatonic corridor had "run-of-river" hydroelectric power dams at Falls Village and Bulls Bridge,[3] the federal study concluded that the river's free-flowing character was not significantly affected. No dams were within the eligible Shepaug River corridor, but a short distance upstream of the Bantam tributary, two hydroelectric power dams affected stream flow conditions enough to disqualify that stretch under the federal criteria. The larger dam, built in 1905, had been inactive since 1974 because the company (Northeast Utilities) had determined that the cost of replacing its machinery was not justified by the small generating potential.

Both the Housatonic and Shepaug studies found relatively low potential for future hydroelectric power development on either river. For the Shepaug river, however, significant potential existed that a project would be developed to supply drinking water to Connecticut cities. The Shepaug was one of the few clean-water resources in that region. Several studies had shown the feasibility of such projects within the corridor, as well as immediately above and below the qualified segment. The federal study noted that a diversion project could be constructed without compromising the corridor's scenic river values.

Housatonic Hydroelectric Projects to Be Expanded

Since the federal study's completion in 1979, Northeast Utilities decided to expand and modernize the hydroelectric generating capacity of the Falls Village and Bulls Bridge dams, applying to FERC in 1985 to modify its existing permits. FERC is reviewing the company's application, and public comment was expected to begin in the summer of 1986. According to a company official, Northeast Utilities plans to increase the Falls Village capacity from 9 megawatts to 15 megawatts by adding another generator to the existing facility and to increase the Bulls Bridge capacity from 7.2 megawatts to 19.1 megawatts. This project will include a new powerhouse, penstock, and intake structure.

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[3] These projects coordinate their operation with the flow of the river. When the flow is adequate, the plants can generate power 24 hours a day. When flows are inadequate, the water is "ponded" behind the dam so that the plants can be used during peak demand periods.

According to this company official, expansion plans for both dams have closely considered strong local public interests to protect the Housatonic's flow conditions and associated values. He said that the expanded projects will use the same amount of flow to generate more power because old equipment will be replaced with more efficient technology. No changes will be made to the existing dams or impoundments.

We discussed these projects with officials from the Housatonic Valley Association and the Housatonic River Commission. The association's executive director expressed no concerns with the Falls Village expansion and expects that FERC will readily approve it. However, he believes the Bulls Bridge expansion would reduce flow conditions below minimum-flow levels needed to maintain downstream fisheries. According to a FERC official, however, the proposed Bulls Bridge expansion will not result in any changes to the existing dam or impoundment. Further, the commission's chairman told us that it has no objections to Northeast Utilities' expansion plans, since the existing facilities are old and the proposed changes will modernize operations. In his opinion, the changes will improve stream-flow conditions because of more efficient equipment. He told us that downstream areas are popular for fly-fishing and kayaking and that the company will maintain high flows during the day, keeping flow levels high enough at all times to protect the fish.

Shepaug Hydroelectric Dam Reactivated

In 1981 Northeast Utilities refurbished equipment and reactivated the Bantam River dam. No additional capacity was added to the 320 kilowatt facility. According to a company official, the refurbished facility's operation has reduced water releases somewhat but has not reduced flow conditions below the minimum level the company agreed to maintain with the Department of Environmental Protection and the Shepaug-Bantam River Board. The board's chairman disagreed, stating that the activated facility's operation is degrading stream-flow conditions. In the dry summer season, downstream water levels rise and fall suddenly, which fishing clubs complain hurts the fish. He told us that the board plans to ask Northeast Utilities to release water every 2 hours, rather than ponding it to increase power production efficiency.

Potential Water Supply Diversion From the Shepaug

Interest is growing within the state for a water supply diversion project, although none has been constructed or is currently planned. Rapid growth in the Roxbury-Danbury areas, southwest of the Shepaug River corridor, has increased pressures for supplying water to that region.

According to an official with the department's Water Resources Board, this area has the state's top priority for future water delivery.

The Connecticut legislature authorized a statewide program in 1985 to develop a plan for public water supply coordination. As a result, the Housatonic Water Utility Coordinating Committee (comprised of water supply utilities and regional planning agencies) was set up for the Danbury area in early 1986 to recommend water supply sources and alternatives. According to an official with the Department of Health Services, this committee has identified the Shepaug as a prime candidate for supplying water to Danbury. She said this proposal continues to generate considerable public support and opposition. The committee's findings and recommendations are not due until sometime in 1988. Although the Shepaug-Bantam River Board is not formally part of the committee, the state is encouraging broad public participation in the process.

In addition, a state-level interagency task force is developing a Connecticut water resources management plan, which will comprehensively examine water issues (quality, supply, wastewater treatment, flood control, recreation, and fish and wildlife habitat needs). A Department of Environmental Protection official told us it will consider the potentially competing issues on the Shepaug. The Shepaug-Bantam River Board's chairman said that future water supply diversion is the greatest potential threat to the river corridor. He said such a project would be acceptable if aquifers were tapped but not the surface waters of the Shepaug.

Shoreline Development

Since 1979 shoreline residential development has increased on part of the Housatonic but not on the Shepaug, according to state and local officials. The Shepaug River federal study found that shoreline development was very light along the corridor as 94 percent of the land was forested or agriculture and only 4 percent was dispersed residential use. Development was heavier on the Housatonic corridor, particularly on the lower 12-mile recreational segment. The Housatonic's 20.5-mile scenic segment was generally undeveloped.

According to the Shepaug-Bantam River Board's chair, the corridor's floodplain is not well-suited for higher-density developments. Although only one township has so far adopted the board's river corridor zoning ordinances that require preservation of streambank vegetation to minimize erosion and scenic impacts, he said that other existing ordinances are generally compatible with the board's guidelines for protecting the shoreline.

According to the Housatonic Valley Association's executive director, shoreline development has increased along the Housatonic, such as on the recreational segment between Kent and New Milford. The association considers some of this development to be incompatible with the corridor's scenic qualities. However, he said that new development does not necessarily threaten the river. Rather, it is the association's philosophy that development in some areas, particularly well planned cluster development, is acceptable although sensitive environmental areas should not be developed. Since 1979 more lands along the corridor have come under public protection by purchase of scenic easements or full title. Examples are the 2,000-acre Stanley Works Tract recently acquired by the National Park Service (NPS) as part of the Appalachian Trail System and several key tracts of natural areas and wetlands purchased from private owners by the association and other natural lands trust groups. The association is actively working along the Housatonic River to influence shoreline developments that balance growth with natural lands protection. Part of their efforts in this regard includes technical land use planning of compatible developments and using the revenue toward purchase of environmentally important lands.

The Housatonic River Commission's chair told us that since 1979 some of the corridor's dairies have been converted into sod farms, which use fertilizers, increasing phosphate pollution in the river. The federal study noted that agriculture, particularly dairy farming, was one of the most important economic activities in the study area and that many dairy farms were evident along the river. In a similar vein, he said the commission is worried about the impacts on land use from a new federal program to reduce surplus dairy supplies by buying out farmers' dairy herds. This could lead to dairy farmers selling their riverfront lands for development or more sod farms. The commission believes such change could harm the river. However, none of our other sources indicated this change was causing or could cause problems for the Housatonic.

Water Quality

The Housatonic federal study found that the Housatonic river's otherwise excellent water quality was impaired by polychlorinated biphenyls (PCBs), a toxic chemical discharged between the 1930's and late 1970's by a General Electric Company plant manufacturing batteries upstream in Pittsfield, Massachusetts. Besides this source, other industries on the river in Massachusetts and Connecticut had discharged PCBs. The presence of PCBs in fish taken from the Housatonic led to a state-imposed health advisory against eating the fish and a downgrade in the river's water quality classification. The Shepaug federal study found the water quality was very good—in some parts the water was clean enough for drinking and elsewhere was suitable for swimming and fish and wildlife habitat. The study noted existing and potential water quality threats, including industrial and sewage treatment discharges, horse and livestock waste runoff, and soil erosion. Since the federal studies were completed in 1979, according to information we obtained, although PCB levels in Housatonic River fish have decreased, the state has not revoked its health advisory or upgraded the water quality classification and that local concerns exist about the lack of water quality monitoring on the Shepaug River.

With regard to the PCB contamination on the Housatonic River, many federal, state, and private efforts have got underway since 1979 in Massachusetts and Connecticut to monitor the extent of contamination and decide on how to clean up the river. Because PCBs are extremely stable chemicals, which do not easily break down into nontoxic forms, the state of Connecticut expects that they will probably be in the river for 50 years or more unless remedial action is taken to remove them from the river's sediments. According to the Housatonic River Commission's chairman, the extensive studies on the extent of contamination as well as public debate of cleanup alternatives have not yet led to a decision on mitigation. He told us that dredging sediments from the river to remove PCBs has been ruled out since this would probably increase their distribution in the river.

We discussed current water quality conditions on the Shepaug River with the Shepaug-Bantam River Board's chairman. He did not indicate that the Shepaug's water quality has changed since 1979, but he said that the board is concerned that no agency is monitoring water quality. Since businesses and other entities that discharge treated wastes into the river must obtain discharge permits from the state and the Environmental Protection Agency, he told us that the board will request copies of permits from these sources so it can monitor what is being discharged into the Shepaug.

Roads

The federal studies found that the presence of a few roads for short stretches along the Shepaug was fairly unobtrusive, while the Housatonic was paralleled by a state-owned 2-lane road, by an abandoned railroad, and by the Appalachian Trail for most of the corridor. At the time, these developments were generally well screened and did not detract from the river's qualities. On the Housatonic, old wooden covered bridges added to the river's picturesque colonial charm.

In 1985 the abandoned railroad paralleling the Housatonic was reopened between North Canaan and Kent by a private developer as a scenic excursion line. In 1986 service will extend south from Kent to West Cornwall. The federal study noted that the state was considering this development itself, which would have improved recreational opportunities along the corridor. According to the commission's chair, the scenic railroad is very popular, and its development is welcomed by the local public.

According to officials from the commission and the Housatonic Valley Association, the state is not now planning to widen Route 7 north of New Milford, although it is being widened south of that area. However, they indicated that the growing popularity of the scenic corridor area might lead the state to widen the road between Falls Village and New Milford, which they believe would be detrimental to the corridor's scenic values and would increase traffic problems. According to officials with the Department of Highways, however, the state is unlikely to widen the road north of New Milford because projected traffic use does not justify it.

There has been no change in roads on the Shepaug since the study was completed, according to the chairman of the Shepaug-Bantam River Board.

Recreational Use

The federal studies on both rivers did not identify significant problems related to recreational use of either the Shepaug or the Housatonic. We learned from local officials that this situation has changed and that recreation-related problems are now a major concern on both rivers. The Shepaug federal study noted that the river's small size limited its capability to support a lot of recreational use without deteriorating the corridor's natural resource values but made suggestions on how to improve public access for recreation. The Housatonic study noted the existing popularity of the corridor for a wide range of recreational uses and the availability of recreational facilities and services. Overall recreational activity on both rivers was expected to increase.

According to the Shepaug-Bantam River Board's chair, concern exists that recreationists are now becoming a problem on the Shepaug River. He cited the example of potential uncontrolled use of the river for inner tubing, which interferes with the trout-fishing. The board wants to closely regulate uses on the river, preferring that people confine their use to the riverbank. He added that local citizens are concerned that recreation-related improvements suggested in the federal study would attract too many people.

The Housatonic River Commission's chair told us that the federal study underestimated the rapid increase in recreational use on the Housatonic. He said recreational demand has skyrocketed since 1979, creating heavy traffic and conflicts in the river among inner tubers, canoeists, kayakers, and anglers. The current situation is of great concern to the local public. The NPS has assisted the commission with advice on defining optimum recreational levels on the river for its river management planning. Rapid increases in canoe use by inexperienced canoeists have created problems for anglers and private landowners and jeopardized water safety. At the commission's request, the Department of Environmental Protection is negotiating with canoe rental companies to control the number of people and improve river safety and etiquette. Northeast Utilities, which owns land along the corridor as part of its operation of the two hydroelectric dam facilities, has added more restrooms and river patrol staff to manage public uses. Recreation management along the corridor is one element addressed by the commission's river management plan. Although the department disapproved this plan in part because of some of its recommendations to limit growth in recreation, this issue promises to be of continuing concern to local residents.

Summary

Since the federal studies' completion in 1979, according to state and local officials and other information we obtained, the most significant changes in developments affecting the two river-study corridors have been changes to existing hydroelectric power projects on both rivers and increased recreational use on the Housatonic. Shoreline development has increased somewhat on the Housatonic, but the effect on the corridor's scenic qualities appears to be limited so far. We found mixed views regarding the impact of the proposed hydroelectric power project changes on the Housatonic as well as the 1981 reactivation of the Bantam River dam. We also found concern about future developments—the water-supply diversion project on the Shepaug and shoreline development on the Housatonic. As yet, neither of the river management authorities have approved management plans for protecting the Shepaug's and the Housatonic's resources under the state's scenic river program. Thus, more than 7 years after the federal studies recommended such an approach for the two rivers, no agency is authorized to implement various resource protection objectives for these corridors. Approved management plans are expected for both rivers by 1987.

Meanwhile, the Housatonic River Commission, the Shepaug-Bantam River Board, and the Housatonic Valley Association are involved at local, state, and federal decision-making levels, attempting to influence proposed activities affecting both rivers.

Illinois River, Oklahoma—Summary of Development

Background

The federal wild and scenic river study of the Illinois River and its two main tributaries, Flint Creek and Barren Fork Creek, found them qualified for the national system.[1] The study divided the Illinois into two scenic segments totaling 35 miles and a third 31-mile recreational segment. The study classified 13 miles of Flint Creek recreational and 36 miles of Barren Fork Creek scenic. The Illinois River flowed through varied scenic landscapes, ranging from high cliffs and bluffs to agricultural valleys, with a sense of isolation prevailing in undeveloped sections. The Illinois was a popular recreation area with canoeing, swimming, fishing, and nature study. Because of negative local reactions to the federal study, the Secretary of the Interior recommended protection by Oklahoma, citing the governor's endorsement of this proposal and the establishment of the Oklahoma Scenic River Commission to protect and manage the river. The Secretary indicated willingness to consider an application from the governor for a 2(a)(ii) designation. Local objections to the federal study included fears about loss of private property and recreational overuse. The President concurred with these recommendations in transmitting the report to the Congress.

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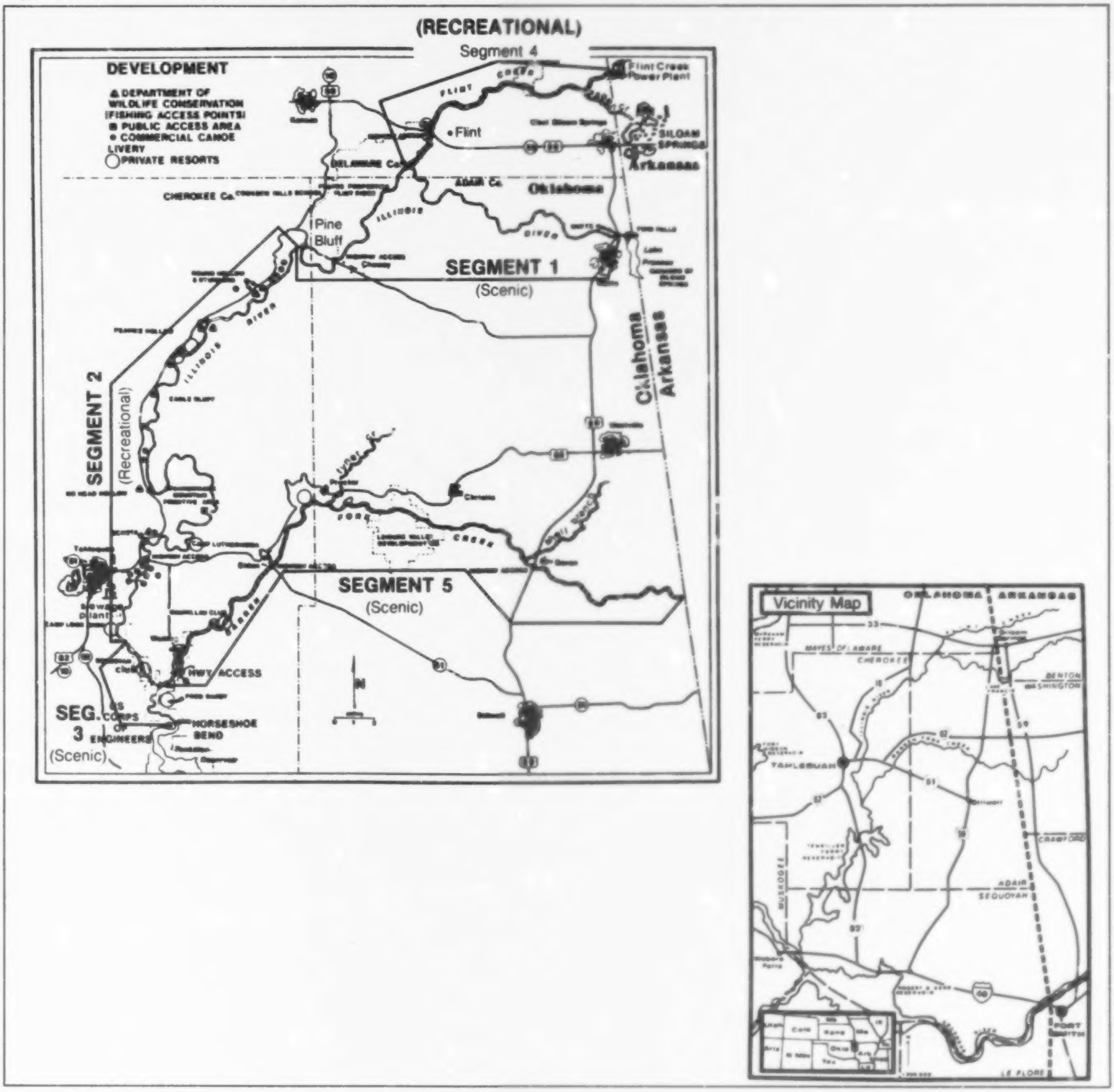
[1] Study authorized—Jan. 1975; study conducted by the Heritage Conservation and Recreation Service, Department of the Interior, and completed—Aug. 1979; study sent to the Congress—Oct. 1979.

Figure IV.1: The Illinois Wild and Scenic River Study Corridor


(RECREATIONAL)
Segment 4
DEVELOPMENT
▲ DEPARTMENT OF WILDLIFE CONSERVATION (FISHING ACCESS POINTS)
■ PUBLIC ACCESS AREA
• COMMERCIAL CANOE LIVERY
○ PRIVATE RESORTS
Flint Creek Power Plant
FLINT CREEK
Flint
SILOAM SPRINGS
Arkansas
DELAWARE Co.
ADAIR Co.
Oklahoma
CHEROKEE Co.
Pine Bluff
ILLINOIS RIVER
SEGMENT 1
(Scenic)
Oklahoma
Arkansas
SEGMENT 2
(Recreational)
Christie
BARREN FORK CREEK
SEGMENT 5
(Scenic)
Tahlequah
Sewage Plant
HWY ACCESS
SEG. 3
(Scenic)
CORPS OF ENGINEERS
HORSESHOE BEND
Vicinity Map
OKLAHOMA
ARKANSAS
MAYES
DELAWARE
CHEROKEE
BENTON
WASHINGTON
TAHLEQUAH
CRAWFORD
ADAIR
SEQUOYAH
MUSKOGEE
LE FLORE

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State Protection Efforts

The Illinois, Flint Creek, and Barren Fork Creek were the initial components designated in Oklahoma's 1970 Scenic Rivers Act, which restricted water impoundments and provided land acquisition authority. At the time, management responsibility was not assigned to a state agency. In 1977 the state legislature established the commission to manage the Illinois River and Flint Creek as an alternative to federal wild and scenic river management. Although state management progress began slowly, recently the state has acted to control canoeing use, which was causing crowded conditions on parts of the Illinois. The Oklahoma commission established a 3,900-commercial-canoe limit per day and collects a small fee from canoeists and canoe rentals to support river management. The commission now maintains five public access areas and picks up trash on the river. It currently is addressing Arkansas' plans to discharge treated wastewater upstream, which is viewed as a major water quality threat to the scenic river corridor. The commission's administrator indicates that more substantive management objectives for the Illinois will be pursued in the next 5 years. In January 1987 the commission will seek broader authority from the Oklahoma legislature to apply controls on agricultural practices and developments along the river.

Status of Developments

To obtain information on developments along the Illinois River, we interviewed by telephone the Oklahoma Scenic River Commission's administrator; the executive director, Oklahoma Tourism and Recreation Department; and its trails and rivers coordinator. We contacted officials in Oklahoma, Arkansas, and federal agencies for information on water quality and water projects and reviewed documents from various sources. Since no problems were reported concerning resource developments, that area is not addressed in this summary.

Water Projects

At the time of the river's study in 1979, two major impoundments were located just outside the Illinois study corridor—Lake Frances Dam on the Arkansas border, supplying water to the city of Siloam Springs, Arkansas, and the Corps of Engineers' multipurpose Tenkiller Ferry Reservoir at the southern end. The federal study noted several potential water projects, including a cross-state water transfer and hydropower project at Chewey and three water supply impoundment sites identified by the Oklahoma Water Resources Board near Tahlequah, Eldon, and Chewey in the event of critical water shortage. In addition, the Corps was studying Tenkiller Ferry Reservoir, which could have led to new impoundments. Since the federal wild and scenic river study was completed, we were told that some of these projects are still being considered and that concerns about the future of Lake Frances Dam have increased.

We spoke with the Assistant Director and Chief, Engineering Division, Oklahoma Water Resources Board about the status of cross-state water transfers and impoundments on the Illinois scenic river corridor. According to the chief, the Oklahoma Comprehensive Water Plan, approved by the legislature in 1980, includes only the Eldon and Tahlequah sites for future development. If built, both impoundments would be very large—280,000 and 1.5 million acre-feet, respectively. However, he doubts that the dams will be built within the next 50 years, if ever, because the state plan identifies many other water supply impoundment sites in Oklahoma that are not on state-designated scenic rivers. The assistant director stated that if the cross-state water transfer plan is implemented, no water will be taken from the Illinois River corridor, because of its scenic status in Oklahoma. The Corps' Tenkiller Ferry Lake study, completed in December 1982, ruled out more water project development because of environmental and economic reasons.

In 1985 FERC issued two preliminary study permits to private companies for hydropower development on Lake Frances Dam. However, the dam needs extensive repair and poses a potential safety hazard and water quality problem. The water resource board's engineering chief stated that the board thinks the dam's poor condition and potential for breaking pose a major safety hazard to residents and property downstream. The state scenic river commission's administrator said that if the dam were to burst on a summer weekend, the lives of thousands of canoeists also would be endangered. The commission's administrator and others said effluent from heavily silted Lake Frances degrades water clarity downstream on the Illinois for 10 to 15 miles.

The city of Siloam Springs, which owns the dam, is to submit alternative proposals for the dam to the Oklahoma water resources board by August 1986. The alternatives mentioned by Oklahoma officials include repair and hydropower development, repair only, or complete removal of the dam. Although dam removal would solve the safety problem, it is unclear whether water quality would improve. According to the program's director, Oklahoma Department of Pollution Control, general opinion is that removing Lake Frances Dam will worsen water quality. Because the dam impedes flow, the reservoir traps some of the nutrient pollutants (phosphorous and nitrogen) allowing them to be partially broken down before passing further downstream. The water resources board's engineering chief also said that siltation from general erosion problems may continue. A decision by Siloam Springs on what to do with the Lake Frances Dam is expected no sooner than the end of 1986.

We identified no other planned or completed water projects on the Illinois River or its two tributaries.

Shoreline Development

In 1979 Illinois' recreational segments had some shoreline development. The scenic segments had primitive, largely undeveloped shorelines; and part of Barren Fork Creek showed no evidence of human use. We found that the Illinois study corridor's shoreline has remained essentially unchanged since that time. At the time of the study, most development was shielded from view by the river's dense vegetation and high banks. Visible developments included farms, single-family homes, road and utility crossings, and commercial development, such as canoe rentals and restaurants.

The study also found that vacation home development was growing. A controversial 3,600 unit/7,000-acre development was planned along 7 miles of a scenic segment of the Illinois, immediately below Flint Creek. The study had concerns with the proposal because of potential problems, such as erosion, water pollution from septic tanks, visual intrusion from homes, and attraction of more development. However, the study reported that the project developer would maintain areas immediately adjacent to the river in a natural state for low-density recreation.

According to the scenic river commission's administrator, the Illinois study corridor's shoreline remains in much the same condition as in 1979, although a small amount of development has occurred. The area is not zoned, but state health regulations prohibit septic tanks within 150 feet of the riverbank, which helps keep structures somewhat back from the river's edge. He said that the commission wants to establish a buffer zone on the river corridor within the next 5 to 10 years to preserve the shoreline. Tahlequah, Oklahoma, is growing toward the river, and the commission hopes to preserve the shoreline's natural conditions through scenic easements and/or purchase of land along the river.

The administrator also said that the 7,000-acre development was built and continues to grow. For the time being, he is satisfied with the type and manner of development there, since it is landscaped and does not detract from scenic values. The administrator feels that the developer is sensitive to the state's scenic river objectives and consults with the commission about any projects in the development. However, the development's growth concerns the commission, as do its artificial lakes, which are filled from the Illinois River. The commission's administrator could not specify what, if any, problems have resulted from this withdrawal but expressed general concern about the practice.

Water Quality

Clear water was cited in the federal study as one of the Illinois study corridor's most attractive attributes. However, the study noted increasing pollution in all three streams, although water quality remained high enough for swimming and smallmouth bass fisheries. We were informed by state officials that water quality has deteriorated since the federal study was completed and is Oklahoma's major management concern. At the time of the study, pollutants were introduced primarily from sources near or upstream of the Arkansas border, generally from sewage disposal and urban and agricultural runoff. The federal study noted general water quality threats to surface and groundwaters. Increasing recreational use as well as Arkansas' plan to replace 13 community sewage treatment plants with 2 regional secondary plants discharging into the Illinois River could degrade water quality.

The scenic river commission's administrator considers deteriorating water quality as the Illinois' most serious threat. The streams are still approved for swimming and still support smallmouth bass, but he believes water quality problems must be solved if these uses are to be maintained. He cited Lake Frances' severe eutrophic condition,[2] which has stained and clouded the Illinois up to 15 miles downstream. The program's director, Oklahoma Department of Pollution Control, stated that the Illinois' phosphorous and nitrogen levels are quite high, having increased dramatically over the last 6 or 7 years. He believes this stems from increased sewage wastewater discharge in Oklahoma and Arkansas, because of more population.

The Environmental Protection Agency and the states of Oklahoma and Arkansas have been cooperating since 1985 on a study of the Illinois' nutrient pollution sources, effects, and corrective strategies. The study will not be finished until January 1987, but according to an official with Arkansas' Department of Pollution Control and Ecology, preliminary results indicate that Lake Frances' eutrophic condition contributes significantly to the Illinois' water quality problems.

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[2] This condition occurs in a reservoir when increased mineral and organic nutrients, such as from fertilizer runoff, reduce the amount of dissolved oxygen, creating an environment that hurts desirable fish species while promoting unwanted weeds and other plants.

Various officials explained that the study was initiated because of Oklahoma's opposition to a new sewage wastewater discharge facility for Fayetteville, Arkansas. The Arkansas official explained that the new facility is needed because the current facility on Arkansas' White River far exceeds its capacity and, as a result, is discharging sewage into that river.

The Arkansas official said the new facility will have an advanced technology for removing pollutants and discharging half of its wastewater into the Illinois and half into the White River, with both streams to receive the same quality discharge. The Oklahoma water quality official stated that his state objects because this will increase phosphorus and nitrogen levels in their state. The Arkansas official told us that the Environmental Protection Agency had issued a permit for constructing the new Fayetteville facility. However, the scenic river commission's administrator told us that the permit may be revoked if discharge is found to exceed acceptable levels and that the commission has taken steps to seek rescission of the permit.

Wastewater treatment in Oklahoma also appears to be a concern. The commission's administrator said that Tahlequah's sewage treatment plant will need to expand. He indicated that if the plant is upgraded as well, the expansion should not cause problems for the Illinois River. However, an analyst with the Oklahoma Tourism and Recreation Department said that his department opposes the expansion. The commission's administrator said that a committee is examining long-term alternatives (20 to 30 years into the future) to discharging into the Illinois.

In other areas of the river basin, improved sewage treatment is expected to benefit water quality. The Arkansas water quality official told us that the Springdale, Rogers, and Siloam Springs secondary sewage treatment facilities in Arkansas have plans to upgrade their treatment systems. Two of the major dischargers into the Illinois River have already been granted construction permits, and the facilities should be completed within 5 years. An official with Arkansas' Department of Pollution Control and Ecology believes that upgraded plants at Springdale, Rogers, and Siloam Springs will significantly reduce the nutrient pollutants and may help reduce algae growth in Lake Frances. He also believes that the improvement in these three facilities will offset any additional nutrient discharges from Fayetteville, Arkansas.

Other water quality problems have developed or worsened since the federal study. State officials are concerned about pollution from poultry and swine processors because more such processing plants may be built. A commercial nursery below Tahlequah has created pollution from pesticide and fertilizer runoff, which the state is now monitoring. The Oklahoma Scenic Rivers Commission's administrator also cited certain agricultural practices that degrade water quality, such as clearing streambanks, which leads to erosion. In response the commission intends to request authority to control agricultural practices. He also indicated that he has had complaints about thermal pollution around Flint Creek Power Plant, which may have reduced the smallmouth bass population.

Roads and Utilities

In 1979 the federal study noted three possible bridge replacements including planned improvement of a state highway bridge crossing Flint Creek. It also noted a proposal for a coal-slurry pipeline across the Illinois River and Barren Fork Creek. The scenic river commission's administrator said that the planned replacement of a 2-lane bridge with a 4-lane bridge on Flint Creek has not yet been funded, but when built he anticipates some slight decrease in scenic quality.

Recreational Use

The study noted that the Illinois was among the top tourist and recreational attractions in northeastern Oklahoma. The study predicted fast growth in river recreation and, with it, potential problems such as visual impacts, litter, water quality degradation, adverse effects on fisheries, and reduced recreational appeal. Information we reviewed indicates that this trend has taken place since the federal study was completed but that the state has increased management attention is this area and does not view this as a problem. The federal study noted that recreational use was concentrated in a 30-mile stretch upstream from Tahlequah. Twenty-five commercial canoe rentals were located in the area, with over 2,500 canoes in February 1978. Canoeing use was estimated at 60,480 trips per year. The Oklahoma Wildlife Conservation Department indicated that it did not have the resources to meet growing recreational pressures on the Illinois. Litter and trespass conflicts between landowners and users were becoming more frequent. Poor upkeep of and damage to access sites were other problems noted in the study.

The commission's administrator and the trails and rivers coordinator, Oklahoma Tourism and Recreation Department, said that the Illinois is still a top recreational attraction. According to a department survey, about 25 percent of visitors to the Illinois float inner tubes and canoe the river for a wilderness experience. Users felt that the quality of the recreational experience on the Illinois was generally good but expressed concern over pollution and litter.

The commission's administrator told us that use is concentrated on 10 miles between Pine Bluff and Tahlequah. Today there are fewer (20) canoe rentals, most of them in this area. He said that because of weekend crowds on the Illinois, a "wilderness" experience is available there only on weekdays, although it can be had always on Barren Fork Creek. The administrator also said that the commission set a limit of 3,900 canoes per day for commercial rentals, in an effort to control recreational demands. He and the trails and rivers coordinator estimated use from May 1 through October 1, 1985, at over 66,000 canoe trips. The commission collects a $1.00 per-trip user fee, a program that has been quite successful in generating revenue for scenic river management in Oklahoma. The commission also maintains five public-access areas, improving their condition and facilities since 1979.

Summary

The current status of the Illinois, Flint Creek, and Barren Fork Creek is mixed, according to information we obtained from state officials. Little shoreline development has occurred since the federal wild and scenic river study was completed, and the largest single vacation home development has adapted to the state's scenic river objectives. Preliminary permits have been issued by FERC to study the Lake Frances Dam for hydropower development, but the continued existence of the dam is in question. Water quality problems have worsened since the study was completed, making this the primary threat to the corridor. However, plans for upgrading some of the sewage treatment plants currently discharging into the Illinois basin are underway. Recreational use has continued to grow, but the state has some controls in place. Many users still feel that the Illinois offers a high quality recreational experience. In addition, the commission plans to expand and strengthen its tools for protecting and preserving the Illinois River and its scenic tributaries.

Appendix V

John Day River, Oregon—Summary of Development

Background

The 147-mile segment of the north-flowing John Day River between Service Creek and Tumwater Falls in north-central Oregon qualified under the scenic river classification criteria.[1] This segment possessed several outstandingly remarkable values, including its free-flowing and undeveloped condition, pleasant high-desert scenery, a wide variety of recreational experiences such as wilderness floating trips, and important archeological and geological values.

The state of Oregon designated this segment of the John Day as a component of its Scenic Waterways System in 1971. In 1971 the governor requested the Secretary of the Interior to designate the corridor as part of the national wild and scenic rivers system under section 2(a)(ii). However, at that time, since the Bureau of Land Management (BLM) owned 47 percent of the corridor's land area, 2(a)(ii) designation was precluded because the act allowed this only when no management cost to the federal government would be incurred. Later amendments to the act removed this obstacle.

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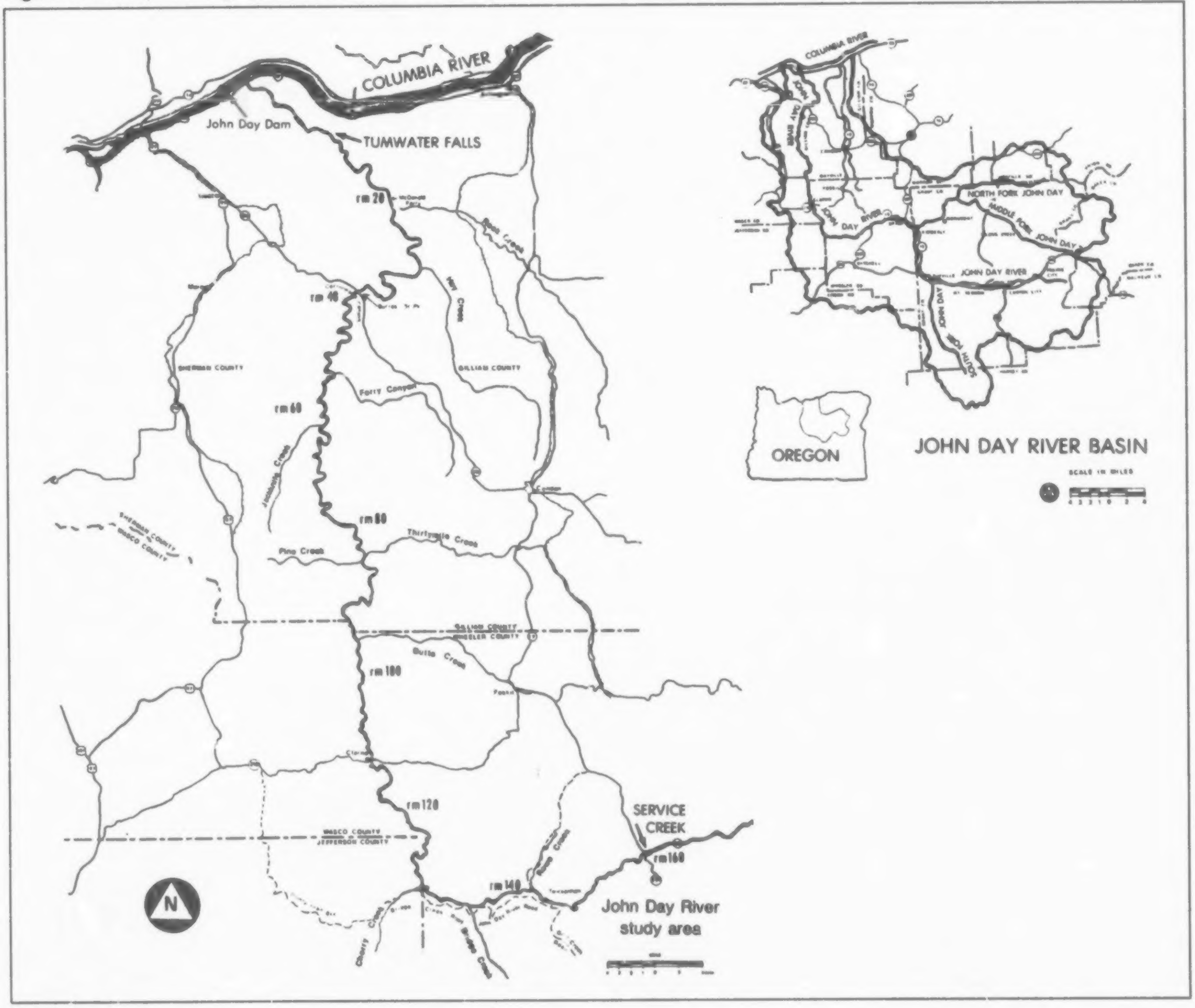
[1] Study authorized—Jan. 1975; study conducted by the National Park Service and completed—Sept. 1979; study sent to the Congress— Feb. 1980.

Figure V.1: The John Day Wild and Scenic River Study Corridor


COLUMBIA RIVER
John Day Dam
TUMWATER FALLS
rm 20
rm 40
rm 60
rm 80
rm 100
rm 120
rm 140
rm 160
SHERMAN COUNTY
GILLIAM COUNTY
Ferry Canyon
Thirtymile Creek
Pine Creek
Butte Creek
SHERMAN COUNTY
WASCO COUNTY
GILLIAM COUNTY
WHEELER COUNTY
WASCO COUNTY
JEFFERSON COUNTY
SERVICE CREEK
John Day River
study area
N
COLUMBIA RIVER
NORTH FORK JOHN DAY
MIDDLE FORK JOHN DAY
JOHN DAY RIVER
SOUTH FORK JOHN DAY
OREGON
JOHN DAY RIVER BASIN
SCALE IN MILES

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The federal wild and scenic river study found that the Oregon Scenic Waterways System had proved to be effective in preventing adverse developments on nonfederal lands along the corridor. Further, the study noted that BLM had sufficient authority to manage and protect its lands along the corridor. As a result the federal study recommended that the corridor be added to the national wild and scenic rivers system at the request of Oregon's governor under the 2(a)(ii) process. The President concurred with this recommendation in transmitting the report to the Congress. In commenting on the draft federal study in August 1979, Oregon's new governor reversed his predecessor's position supporting federal designation. He noted that local public opinion did not then support national designation, that the present system of state river management had been successful, and that there was no serious threat to the river's free-flowing or other values. As a result, he stated he did not plan to request 2(a)(ii) designation from the Secretary.

State Protection Efforts

According to Oregon's Scenic Waterways Program administrator, the state is still not considering requesting 2(a)(ii) designation of the John Day corridor because no threat of dams or other water projects exists that would justify federal designation over the corridor's current status as a state scenic waterway. He also said that BLM's management of the federal public lands along the corridor continues to be compatible with Oregon's management objectives for the river.

Status of Developments

In order to obtain information on development and current conditions along the John Day River since 1979, we interviewed by telephone the Scenic Waterways Program administrator (Division of Parks and Recreation, Department of Transportation); officials on the state's interagency Water Resources Committee for the John Day River Basin; and officials with the Oregon Natural Resources Council. Resource development and recreation were not major concerns when the John Day River was studied under the federal program. We found this situation had not changed since that time, so separate discussion of those areas is not presented in this section. We contacted BLM's Prineville District Office, which manages the public lands along the river's corridor, to obtain information about conditions, their land and river management activities, and their recent resource management plan and wilderness area studies. To verify information about water projects in the area, we contacted FERC, the Corps of Engineers, and SCS.

Water Projects

No major water projects were within the John Day River study corridor when it was studied under the program, and this condition remains unchanged. The federal study reported that the Corps had identified five conventional multipurpose dam and water storage sites within the corridor but had no plans to further study their development. Oregon's state scenic waterways regulations prohibit dam, reservoir, or other water impoundment facilities on waters within scenic waterways. Other water projects (such as diversions or streambank protection) are not constructed except as permitted by the state. According to the program administrator, because the corridor is a designated scenic waterway, federal and state agencies are not proposing construction of new water projects. He said the corridor has never really had much potential for hydroelectric power development and the Corps' study of five potential damsites did not lead to further proposals. The Corps' North Pacific Division told us that the agency has no plans for projects affecting the John Day study corridor. A division official told us that the five damsites are unfeasible because they are not economic and would interfere with the river's migrating salmon.

The state's program administrator told us that since 1979 some streambank stabilization projects have occurred within the corridor. The corridor has always had a soil erosion problem because the region is so dry with insufficient vegetation to stabilize riverbanks. Upstream water diversions and impoundments are thought to affect flow conditions within the corridor, exacerbating soil erosion problems. Streambank stabilization projects are closely regulated under the scenic waterways program. The projects have generally been small rock jetties, which do not detract from the river's scenic and natural appearance, rather than extensive riprap projects (stones or concrete chunks thrown together to prevent erosion).

Shoreline Development

The federal study found the corridor to be undeveloped—the predominant land use was ranching and livestock production. BLM owned 47 percent of the shoreline, the state owned 1 percent, and 52 percent was privately owned. In 1979 six electric powerlines and one gas pipeline crossed the corridor, and three state and three county roads provided access to the river. We found that development has increased only slightly since that time.

The Oregon Scenic Waterways program includes the 147-mile study segment as a scenic waterway. The state has classified part of the John Day corridor as a "natural river area," which, according to the program administrator, mirrors the federal program's "wild" classification. The lands along this segment are overwhelmingly federally owned (BLM) and cover about 30 miles of the corridor between Thirtymile Creek and Ferry Canyon Creek. New shoreline development is permitted only if it is compatible with existing land use practices and its effects are limited to only the immediate vicinity. The state classified the upstream and downstream segments as "scenic river areas," which are also managed to preserve their largely undeveloped character, but extensive agricultural land use is allowed.

According to the program administrator, since 1979 the state had permitted some development on private lands that was necessary for agricultural purposes of existing farms. Any proposed development is closely reviewed under the scenic waterways regulations so that structures will be designed and sited as inconspicuously as possible. To monitor compliance with the program, the Parks and Recreation Division makes periodic inspections along the corridor to identify unauthorized development and will respond to outside reports of such development.

A representative of the Oregon Natural Resources Council told us that the state's regulations allow ranchers to replace natural sagebrush plants with agricultural crops, such as alfalfa. The regulations allow grazing land to be placed under cultivation except within the corridor's "natural river area" segments, the most primitive segment. He said that much land has been converted along the "scenic river areas" since 1979, which in his opinion has altered the corridor's scenic quality. However, the state program administrator told us that the designated scenic river areas are lands traditionally used for farming and livestock operations.

The state program administrator told us that no new roads or utility crossings of the corridor have been added since 1979. The program office will review proposed utility crossings in order to site them unobtrusively or locate them with existing crossings. According to BLM, a buried 42-inch gas pipeline and maintenance road crossing has been permitted for construction. It will cross the river corridor at Thirtymile Creek, where an existing 36-inch buried gasline and a maintenance road cross the river.

Since 1979 BLM has engaged in land use planning and a study of proposed wilderness areas for its lands along the John Day River study corridor. BLM's proposed actions, if implemented, should contribute to land use practices compatible with those found by the federal scenic river study in 1979 and even improve natural and scenic resource values along the corridor. BLM's Two Rivers Resource Management Plan's preferred alternative will correct streambank erosion and water pollution associated with livestock grazing by building fences and limiting the access of cattle to the river. Two special management areas on the corridor are to be administered to protect their scenic and natural qualities.

In April 1985 BLM published draft wilderness area proposals for public lands in Oregon. Two contiguous wilderness areas are proposed to be added to the National Wilderness Preservation System, protecting 23,442 acres of BLM public lands straddling the John Day River wild and scenic study corridor for 37.5 river miles (the Thirtymile Creek-Lower John Day and North Pole Ridge areas). If these lands are designated wilderness, existing routes allowing vehicular and livestock access would be closed (which would enhance natural values and improve opportunities for solitude and primitive recreation). Future energy and mineral development would also be precluded, wildlife habitat would be improved, and limits on recreational use lands would be imposed if crowded conditions threatened the area's wilderness values.

Water Quality

The federal study found water quality problems affecting the John Day corridor. These problems—bacterial pollution from waste material, excessive levels of nutrients (ammonia and nitrates), and muddiness from soil erosion—were caused mainly by livestock grazing and pasture practices and continue to be a concern. The federal study expected improvement from federal and state programs to correct situations adding sediment and livestock wastes to the river.

Since 1979, although water quality has not improved, the state has increased its efforts to correct the John Day's problems, according to an official with the Department of Environmental Quality. The river is classified as a recreational stream (boating, but not swimming) with migrating salmon, but because of the continuing pollution problems, the river is only "partially supporting" these uses. In 1983 the Oregon legislature approved a strategic water resource planning program. The program establishes an interagency planning group that is to develop water management plans for Oregon's river basins to coordinate surface and groundwater planning. As part of the strategic planning for each basin, the issues of water quantity, quality, and use; land use; fisheries; and hydroelectric development will be integrated.

The John Day River Basin is the test case for the various state agencies' implementation of the strategic water planning process. Planning efforts for the John Day began in 1985 and should be finished by fall 1986. According to a Department of Environmental Quality official, preliminary analysis of the basin identifies its problems to be excessive flows in the winter (causing soil erosion) followed by inadequate flows in the summer (increasing bacteria levels from livestock wastes). Upstream water basin projects, particularly within Malheur National Forest, contribute to the fluctuating flow conditions. The state official said that implementation of the John Day River Strategic Water Plan in 1987 will direct state actions to control these water quality problems and indicates a need to work with the U.S. Forest Service to improve water flows. He also told us of ongoing state programs to reduce pollution of the river from cattle wastes.

Summary

We learned from state and federal officials and various documents that there has not been development since 1979 along the John Day River study corridor that would degrade the river's wild and scenic values. Regulation of land use activities along the corridor under the state's scenic waterways program continues as it did before 1979. BLM's land management activities continue to be consistent with the state's scenic river objectives for the John Day. Water quality problems still exist, but the state is taking steps to address their resolution. No adverse water projects have been built or are expected. The state has permitted small-scale, unobtrusive streambank stabilization projects to reduce soil erosion.

Appendix VI

Kettle River, Minnesota—Summary of Development

Background

Seventy-nine miles of the Kettle were studied to determine its suitability for inclusion in the national wild and scenic rivers system.[1] The federal study, which relied mainly upon the 1974 study of the Kettle issued by the Minnesota Department of Natural Resources, found that two segments of the Kettle,totaling 58 miles, qualified. The study found that the Kettle possessed many outstanding natural and scenic values, including primitive shorelines remote from human influence; a course flowing through federal, state, and local wildlife, park, and forest areas; an abundant variety of fish and wildlife; and excellent white-water canoeing.

In transmitting the study to the President, the Secretary of the Interior proposed state administration of the 52-mile segment of the Kettle within Pine County since, in 1975, Minnesota had designated that segment as part of the state Wild, Scenic, and Recreational River System and had developed a management plan.[2] According to the federal study, Minnesota had intended to seek a 2(a)(ii) designation for the 52-mile corridor but by 1976 decided against this course on the grounds that federal designation would not be in the best interests of the resource or the state's scenic rivers program. The Commissioner of the Department of Natural Resources reaffirmed this position in 1979, citing inevitable adverse public reaction to federal designation. The President concurred with Interior's recommendations in transmitting the report to the Congress in October 1979.

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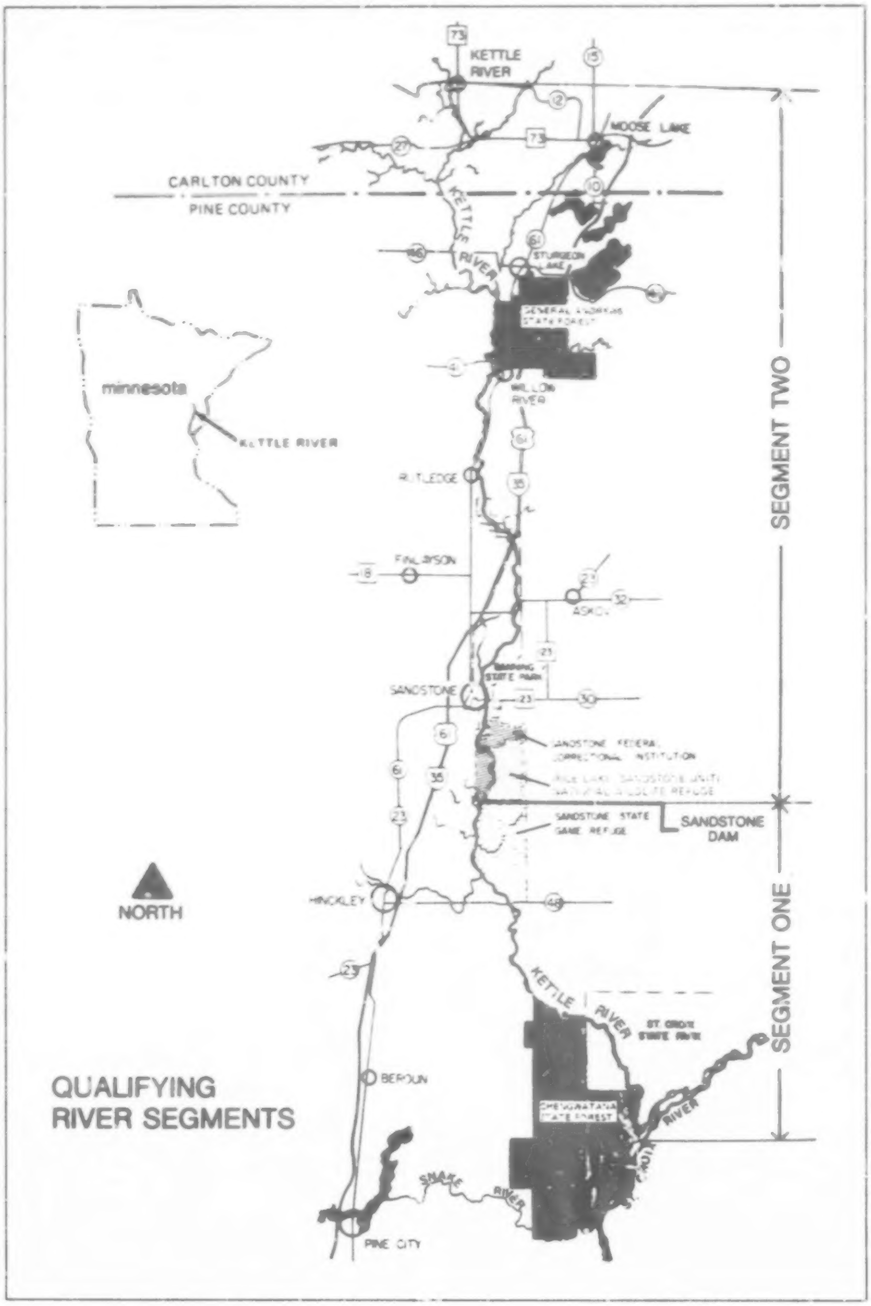
[1] Study authorized—Jan. 1975; study conducted by the National Park Service and completed—Aug. 1979; study sent to the Congress—Oct. 1979.

[2] The upper 21 miles of the 79-mile study corridor was an open, flat, and swampy area found not qualified under the federal criteria. Interior did not recommend designation of a 6-mile segment in Carlton County because Minnesota had not included it in its rivers system.

Figure VI.1: The Kettle Wild and Scenic River Study Corridor


73
KETTLE RIVER
15
12
73
MOOSE LAKE
27
CARLTON COUNTY
PINE COUNTY
10
61
KETTLE RIVER
46
STURGEON LAKE
GENERAL ANDREWS STATE FOREST
41
WILLOW RIVER
minnesota
KETTLE RIVER
61
RUTLEDGE
35
FINLAYSON
18
23
ASKOV
32
23
BANNING STATE PARK
SANDSTONE
23
30
61
SANDSTONE FEDERAL CORRECTIONAL INSTITUTION
61
35
RICE LAKE (SANDSTONE UNIT) NATIONAL WILDLIFE REFUGE
23
SANDSTONE STATE GAME REFUGE
SANDSTONE DAM
NORTH
HINCKLEY
48
23
KETTLE RIVER
ST. CROIX STATE PARK
SEGMENT TWO
SEGMENT ONE
BEROUN
QUALIFYING RIVER SEGMENTS
CHENGWATANA STATE FOREST
RIVER
ST. CROIX
SNAKE RIVER
PINE CITY

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State Protection Efforts

The Kettle's management plan, the Kettle River Ordinance, was the first one to be developed under Minnesota's Wild, Scenic, and Recreational River System and was prepared for and adopted by the counties and municipalities within the corridor. The Department of Natural Resources assists local governments in interpreting the plan and its provisions and also approves all variances that local bodies seek to issue. The plan requires protection of approximately 0.25 mile on either side of the river, while the state scenic river rules specify permitted, conditional, and prohibited land uses to preserve and manage the outstanding values of the corridor. The state land use rules are stricter for areas designated "wild." For example, buildings must be set back 150 feet from the river in the scenic segment and 200 feet in the wild segment. In addition, the department acquired nearly 1,400 acres along the shoreline.

A recent department study of state and local government land use management found some problems with administering the ordinance, but various officials told us the corridor remains in much the same condition as in 1974. The department's trails and waterways director was satisfied with the protection and management of the Kettle under the state's program.

Status of Developments

To obtain information on developments along the Kettle's study corridor, we interviewed by telephone several Department of Natural Resources officials involved with administering the state's rivers program. We also gathered information about water projects and water quality from state and federal agencies.

Water Projects

Since the federal wild and scenic river study was completed, the only new water project development is a proposed reactivation of hydroelectric production on an existing dam. At the time of the study, an inactive hydroelectric dam below Sandstone separated the Kettle's scenic and wild segments. Minnesota now owns the dam, and in December 1982 FERC permitted the department to reactivate it as a run-of-river facility.[3] Currently though, the future of the dam is in doubt. Classified as low-hazard, the dam needs repair if it is to be reactivated and funds must be obtained for that purpose. Another alternative may be to remove the dam. A Department of Natural Resources official most familiar with the project indicated that any actions must be compatible with the Kettle's scenic river regulations and management plan. Further, according to the Department of Natural Resources official responsible for monitoring the Kettle's land use regulations, the feasibility of reactivating the project may be questionable. It is difficult to predict at this point when a decision will be made, although repair funds may be requested in the department's new budget.

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[3] These facilities coordinate their operation with the flow of the river. When flow is adequate, the plants generate power continuously. When flows are low the water is "ponded" behind the dam so the plant can operate during peak demand periods.

In 1982 the Corps of Engineers proposed to study damming the Kettle's "wild" segment for flood control purposes. However, the Corps dropped the proposal after receiving a letter of protest from the department. According to officials at the Minnesota-Wisconsin Boundary Area Commission and the department, the Corps could not have justified this project because of the political, social, and environmental impacts.

We identified no other water projects proposed or constructed on the Kettle since 1979.

Shoreline Development

The shoreline remains in much the same undeveloped condition as in 1979. The Kettle River Ordinance and the state scenic rivers act regulate setback, density, and permissible land uses in the corridor. Public ownership of private lands has increased with Minnesota's acquisition of approximately 1,400 acres in fee or scenic easements. Today, most of the wild segment's shoreline is either publicly owned or protected by scenic easements. A department draft evaluation of state and local government land use management along the Kettle found that development pressure has not been extensive. The study found minimal development within 300 feet of the river; however, it also recommended that Pine County's implementation of the Kettle River Ordinance be improved, with the department's assistance and monitoring.

At the time of the study, a federal medium-security prison, the Sandstone Federal Correctional Institution, existed on the Kettle's banks. In 1982 the U.S. Bureau of Prisons decided to change it to a higher-security facility. This required many alterations, including construction of a watchtower, extensive fencing, and clearing of trees down to the river. Out of concern over the effects of these changes on the river's scenic quality, the department sued the Bureau of Prisons over its condemnation proceedings to obtain and clear state-owned shoreline. Ultimately, the Bureau of Prisons agreed to cooperate with the department to mitigate the impacts on the area. According to two department officials, the renovations and riverside management at the federal facility are satisfactory in preserving the shoreline's scenic quality.

Water Quality

The 1979 federal study stated that water quality was excellent. According to a department official, water quality probably has improved since that time. Inadequate sewage treatment at the federal prison in the early 1970's was corrected when the facility joined with the village of Sandstone to build an improved sewage treatment plant. According to another official from the Minnesota Pollution Control Agency, the Kettle's water meets fishable standards, but occasional violations of standards due to bacteria levels mean that the Kettle is impaired partially for swimming. The official told us these violations are to be expected in times of low flow and probably derive from land uses, such as agriculture.

Roads and Utilities

The 1979 study noted that a proposed gas pipeline would cross the Kettle's wild segment. The department's trail and waterways director told us that this pipeline was never built. Further, the state's management plan confines all utility crossings to corridors existing at the time of the study and prefers crossings in the scenic segment, where feasible, to ones in the wild segment. The director also told us that no roads have been opened in the wild segment since 1979.

Recreational Use

The federal study noted that some litter and trespass problems had been associated with recreational use. The department's land use management evaluation found that private landowners continue to experience these problems, mainly from hunters (canoeists and boaters were the least frequently mentioned source). The director stated, however, that a recent survey by the state on recreational use of Minnesota's rivers indicated very few landowner complaints and little problem with trash on the Kettle. He also said that an increase in recreational use has occurred mainly in state parks and forests and is controllable under existing regulations.

Resource Development

The federal study noted that some timbering was occurring on the wild segment of the lower Kettle. This practice continues but does not appear to be a problem since it is controlled by a plan developed by the department's Division of Forestry. The assistant forester at the division told us they plan to cut approximately 2,000 acres of timber in the state forest along the Kettle over the next 10 years, in accordance with good timber management practices. He said timber harvesting will promote wildlife habitat in the area. The division will comply with the Kettle's management restrictions and will not cut any trees within 200 feet of the river. The assistant forester said that the cutting will not be visible from the river and impacts will be limited to noise between June and September. He also stated that some light timbering occurs on privately owned lands along the wild segment, but he is not aware of any violations of the scenic river plans and ordinances. The department's land use specialist stated that some limited commercial timbering is occurring in the scenic segment, controlled by the land use regulations, and is not causing problems on the river.

Summary

According to state officials, the Kettle appears to have retained the wild and scenic qualities described in the 1979 federal study. Minnesota is actively monitoring and managing the scenic corridor through land use regulations, river management plans, and administrative assistance to local governments. Very little development has occurred, natural resources are managed and monitored, and recreation is being controlled. Opinions are divided on whether the state-owned Sandstone Dam should be repaired and reactivated for hydropower or removed because of safety hazards. A proposed Corps of Engineers study to dam the wild segment for a flood-control project was dropped at the state's request. In addition, the state acted to mitigate the effects of federal prison alterations.

Penobscot River, Maine—Summary of Development

Background

The federal wild and scenic river study found that 312 miles of the Penobscot's east and west branches (from their headwaters to the town of Medway) qualified for the national system.[1] The branches were classified into six wild (167 miles), four scenic (120 miles), and one recreational (25 miles) segments. The corridor's primary values included outstanding fishery and wildlife resources (land-locked salmon, bald eagle, moose), extensive scenic resources with exceptional primitive beauty (the corridor was almost entirely forested), and significant wilderness-oriented recreation opportunities in Maine's "wildlands."

The federal study recommended that the river be protected through state and private action, which the President concurred with in his transmittal to the Congress. If the state requested, 295 miles of the corridor could be designated as part of the national wild and scenic rivers system under the 2(a)(ii) process as a state-administered river. The study recommended that the state protect the scenic and natural resource values on privately owned lands by applying revised conservation zoning and environmental regulations to prohibit development within 250 feet of the streambanks of wild segments and require state review and approval of all timber harvesting within the corridor. According to a Maine official, the state prefers to protect its rivers by state action rather than by federal designation and management.

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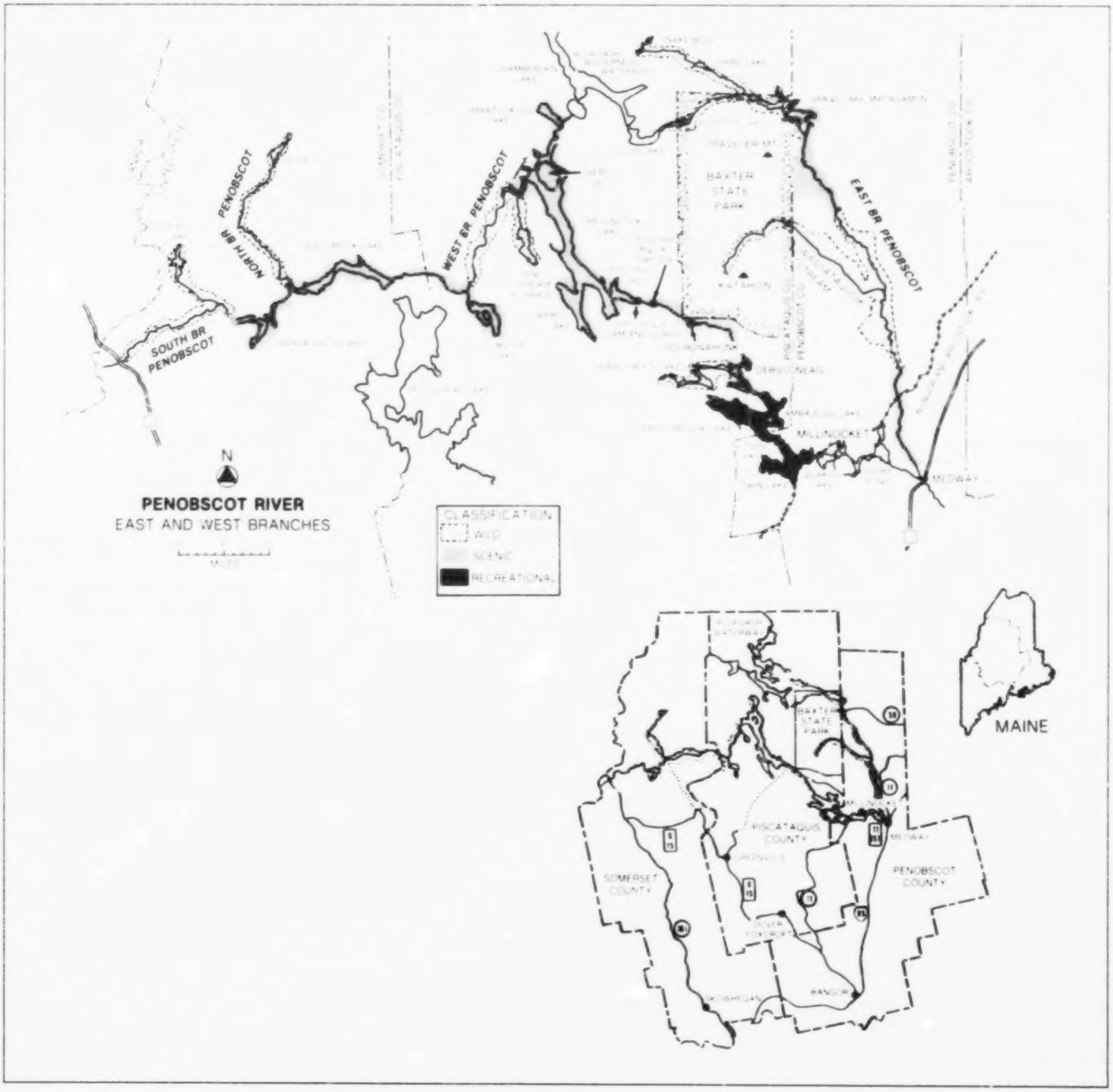
[1] Study authorized—Oct. 1968; study conducted by the Bureau of Outdoor Recreation, Department of the Interior, and completed— July 1976; study sent to the Congress—May 1977.

Figure VII.1: The Penobscot Wild and Scenic River Study Corridor


NORTH BR PENOBSCOT
SOUTH BR PENOBSCOT
WEST BR PENOBSCOT
EAST BR PENOBSCOT
BAXTER STATE PARK
TRAVELER MT
KATAHDIN
SOURDNAHUNK
DEBSCONEAG
MILLINOCKET
MEDWAY
PISCATAQUIS CO.
PENOBSCOT CO.
N
PENOBSCOT RIVER
EAST AND WEST BRANCHES
MILES
CLASSIFICATION
WILD
SCENIC
RECREATIONAL
ALLAGASH WATERWAY
BAXTER STATE PARK
PISCATAQUIS COUNTY
SOMERSET COUNTY
PENOBSCOT COUNTY
MEDWAY
GREENVILLE
DOVER FOXCROFT
SKOWHEGAN
BANGOR
MAINE

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The federal study found that the state Land Use Regulations Commission's interim land use zoning standards could adequately protect most of the land within the corridor. Existing standards could be used to place a streambank zone within the commission's "protection districts" (where land use was regulated to protect natural, recreational, or historical values) and remaining corridor lands within the commission's "management districts" (land devoted primarily to commercial timber production).

In November 1978 Maine's governor wrote the President of his decision not to request federal designation of the Penobscot River. His decision was based on strong public and state-agency opposition to any federal role in managing the Penobscot, ongoing state-agency efforts to develop measures for preserving recreational and scenic resources, and applicability of other state and federal authorities to control future dam construction that could affect the west branch, making federal wild and scenic river designation unnecessary.

State Protection Efforts

Since 1981 Maine has taken several steps to develop legislation and programs to guide multipurpose river management. These efforts addressed public concern with the growing conflicts on Maine rivers between water resource development for hydropower versus preservation of natural, scenic, and recreation resources. Between 1981 and 1982, studies were done to streamline state permit and review procedures for hydropower developments and to comprehensively inventory all of Maine's rivers (in cooperation with the National Park Service) to identify river stretches with unique natural and recreational values and propose strategies to permanently protect those values. In 1983 these studies culminated in the state legislature enacting a river protection act (known as the Maine Rivers Policy) and the Maine Waterway Development and Conservation Act. The policy seeks to strike a balance among the competing uses of the state's outstanding rivers while protecting them from unreasonable development. The Maine Waterway Development Act provides for a comprehensive permitting law for the review of hydropower projects.

The Maine Rivers Policy, among other provisions, prohibits new dams on 1,100 miles of 18 rivers unless specifically authorized by the legislature, gives additional protection from incompatible shoreline development along 700 miles of rivers, and amends the state's shoreland zoning law. Regulations were authorized requiring more protective frontage, setback, and screening requirements. Within the 250-foot shoreland zone, new structures are to be set back at least 125 feet from the river, gravel pits and new roads are generally prohibited in the zone, and installation of public utilities is by permit only.

The Waterway Development Act simplifies and clarifies requirements for permits while ensuring reasonable protection of natural resources and the public interest in the use of the state's waters. Permits will be issued if the applicant demonstrates that the following statutory criteria are met: financial and technical ability, public safety, significant public benefits (including creation of more jobs for Maine workers), traffic movement, consistency with the commission's land use zoning, environmental mitigation of adverse impacts, and environmental and energy considerations (i.e., the project's advantages outweigh its direct and cumulative adverse effects on a broad range of factors).

The policy only partially protected the Penobscot River study corridor from new dams. New dams are specifically precluded on the 107-mile east branch corridor and on a few segments of the 180-mile west branch corridor. Particularly, a 6-mile segment of the west branch (Ripogenous Gorge) with widely acclaimed recreational, scenic, and fisheries values, as well as high potential for hydroelectric power development, was omitted by the legislature, which had decided not to rule out such development.[2] In 1981 the developer, Great Northern Paper Company, that owns 95 percent of the lands along the west branch, donated a perpetual conservation easement to the state on a 500-foot-wide zone along 78 miles of west branch shoreline as part of a nonfederal scenic river alternative for protecting the corridor's resources. However, the easement did not preclude the company's future development of a dam in the Ripogenous Gorge.

Status of Developments

In order to obtain information about developments along the Penobscot River study corridor since 1976, we interviewed by telephone state agency officials involved with river and land use management and hydroelectric power regulation. Specifically, we contacted the state's Land Use Regulations Commission's assistant to the director; the hydropower coordinator, Bureau of Land Quality Control, Department of Environmental Protection; and the environmental resources planner, Bureau of Parks and Recreation, Department of Conservation. We also discussed developments along the corridor with a representative of the Natural Resources Council of Maine. We obtained documents from various sources to provide additional information about management and regulatory efforts and conditions on the Penobscot as well as general information on the Maine Rivers Policy and associated procedures. We also obtained information on water projects from federal agencies. Since we found that no change had occurred within the corridor regarding roads and utilities and water quality, this summary does not address these areas. According to a state official, the Penobscot's water quality is generally excellent, except for pollution around Millinocket. This is the same condition as noted in the federal study.

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[2] However, state permitting of any proposed hydroelectric power projects would be determined under the various criteria of the Waterway Development Act and water quality certification under the federal Clean Water Act.

Water Projects

The federal study found that the west branch's natural flow was manipulated by 15 dams at 4 major areas. Since 1976 no new hydropower projects have been developed on the Penobscot River study corridor, and legislation was enacted to prohibit them on the east branch. The 15 existing dams were operated by the west branch's primary landowner, Great Northern Paper Company. Great Northern regulated flow conditions to maximize hydropower supply to its pulp mills. Flow conditions on the east branch were affected by two dams, one outside of the corridor, operated by Bangor Hydro-Electric Company for its generating plants below Medway.

The study reported that the west branch had high potential for new hydroelectric power projects, while low potential was noted for the east branch (which did not have hydropower facilities in 1976). The study noted that Great Northern was actively considering developing hydropower facilities on the west branch's scenic segment between Ripogenous Dam and Sourdnahunk Falls (Ripogenous Gorge) that could increase power production capacity by 240 percent. According to a Department of Conservation official, Great Northern opposed inclusion of the Penobscot into the national wild and scenic rivers system. This contributed to the state not seeking designation. Three potential sites considered by Great Northern were the falls of Debsconeag, Sourdnahunk, and the Arches (Holbrook and Ambejackmockamus (also known as "Big A")). The federal study concluded that if such facilities were developed, the significant natural features of the segment would be lost. Some of the Penobscot's best white-water canoeing, as well as 6 miles of summer habitat for land-locked salmon, would be inundated.

The 1983 Maine Rivers Policy prohibits water projects on the east branch. The act specifically did not prohibit further hydropower development on the west branch and Great Northern had moved forward since 1976 on its intent to build a major new dam, the Big A, on the west branch. Consideration of the Big A project sharply divided the public in Maine and at national levels. Substantial public support existed within the state because the project would help Great Northern, a major employer in Maine, to expand its pulp mill operations. On the other hand, environmental and sport fishing groups within Maine and at the national level actively opposed the project for its impacts on the river's natural, scenic, and recreational values. These groups considered the west branch of the Penobscot the "nation's most threatened river" because of the Big A proposal.

In March 1984 Great Northern filed its license application with FERC for the Big A.[3] It subsequently applied at the state level under the hydropower permit process now guided by the 1983 Maine Waterway Development Act, as well as for a water quality certification required under section 401 of the federal Clean Water Act. Thus ensued a lengthy and highly controversial regulatory review of the Big A project before two Maine agencies—the Land Use Regulations Commission and the Department of Environmental Protection. In September 1985 the commission issued a hydropower permit for the Big A but applied several conditions to the permit to address concerns that the project satisfy the statutory requirements for public employment and economic benefits and consider possible alternatives and energy conservation measures that could make the project unnecessary. In January 1986 the department's board denied approval of a water quality certification for the Big A because the project's impoundment would degrade the river's quality below its legally classified level, cause irreparable harm to the significant and unique land-locked salmon in the river, and cause an unmitigatible loss of the river's exceptional and highly utilized sport salmon fishery and whitewater boating resources.

In March 1986 Great Northern asked FERC to withdraw the company's license application. According to the company's press release, ". . .the immense drain on our resources of pursuing this project is more than we can continue to support." The company cited the burden of complying with some of the conditions imposed by the commission on the state hydropower license and the state's denial of the water quality certificate needed to obtain a license from FERC.

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[3] The proposed project would be a rock-fill and concrete run-of-river dam, 148 feet in height and 2,300 feet in length, creating an impoundment of 857 acres (3.5 miles in length and 0.5 mile in width, with a maximum depth of 138 feet). The energy production capacity would be 40.5 megawatts.

According to state officials, Great Northern's withdrawal of its license application from FERC and the state's denial of the water quality certification means that this proposed project is finished. A Department of Conservation official told us that Great Northern could propose new hydropower projects elsewhere on the west branch, but the Department of Environmental Protection's hydropower coordinator doubts this will happen. He said that, given the prolonged, expensive, and ultimately fruitless process Great Northern went through for the Big A, he thinks any company would be unwilling to risk it.

However, Maine's governor and legislature have recently made administrative and statutory changes affecting future development of hydropower projects directly in response to dissatisfaction with the regulatory agencies' decisions on the Big A. Perhaps the most significant change is the April 1986 "Act to Clarify the Application of Water Quality Standards to Hydroelectric Projects."

Denial of the water quality certification for the Big A created controversy within Maine because the regulatory decision was based on the river's existing classification (recreational and fisheries river) rather than on standards for lakes. In Maine the class B-1 standards applied to the west branch of the Penobscot require that the river satisfy criteria for dissolved oxygen and specific designated uses (propagation of unique salmon and nationally significant white-water recreation), while the applicable standards (Class GP-A) for lakes do not require that of the proposed dam's impoundment once it reaches 30 acres in size. The April 1986 legislation changes this. Future water quality certifications will be decided on water quality standards for lakes over 30 acres—i.e., the reservoir to be created behind the proposed dam. Further, mandatory issuance of the water quality certificate is required within 5 days of the issuance of a state hydropower permit. However, Maine's hydropower permit procedures do not apply specific water quality criteria against which proposed hydropower projects must be judged. With respect to issuing the certificate, agency determination "shall not include any proceedings or substantive criteria" other than those applicable to lakes over 30 acres.

Thus, it appears that these revised procedures could weaken the water quality standards used in Maine in deciding upon future hydropower projects. However, this is not clear because a Department of Environmental Protection official indicated that the Big A project would not have been approved by the state even if the revised water quality criteria for lakes had been applied. According to the official, the west branch's nationally significant fisheries and recreational values would have been lost, an issue that would remain key even under state water quality standards for lakes.

Shoreline Development

The federal study found that, except for a 15-mile unqualified segment between North Twin Station and Medway, the river's shoreline was undeveloped forest land in an area known as Maine's wildlands. This condition has not changed since the study was completed. Much of this was commercial forest owned by a few timber producers, while the rest was wetlands unsuitable for development. Since 1972 the Land Use Regulations Commission has had authority to set policy and regulate land use and protection within the Penobscot area. At the time of the federal study, the commission had implemented interim land use regulations for protection districts (to protect natural, recreational, and historical values) and management districts (primarily for timber harvesting).

According to a commission official, the Penobscot's shoreline has generally remained heavily forested. Since 1976 the commission's land use regulations for the Penobscot have been finalized. Most shorelands have been classified as a "recreation protection subdistrict" in order to protect an area with unusually significant primitive recreation activities from development and intensive recreational uses. The boundary extends 250 feet from each side of the river's normal high water mark. Prohibited land uses include residential dwellings, commercial and industrial uses, and solid waste disposal. Land uses that come under the commission's standards or permitting requirements include timber harvesting, roads, bridge crossings, and dredge and fill activities.

Additional shoreline protection is provided for a 1,000-foot-wide zone (500 feet each side) along 66 miles (8,000 acres) of the west branch and parts of the east branch. In 1981 Great Northern donated a perpetual conservation easement to the Department of Conservation, and a 20-year Resource Protection Plan was adopted for shoreline owned by the company. Although the easement does not preclude future hydroelectric development, shoreline development in the zone is prohibited (except for structures necessary for forest and recreation management). The plan provides additional land use standards for commercial forest operations by Great Northern. The plan's provisions were negotiated with the commission and the department as the company's alternative to the commission's recreation protection zoning for these segments.

Recreational Use

The federal study found that the Penobscot's significant wilderness-oriented recreation opportunities (including canoeing, fishing, and camping) were among its primary values. At that time, recreational use was greatest on the west branch. An estimated 37,000 people, mostly Maine residents, registered at checkpoints maintained by Great Northern Paper Company, the principal landowner along the west branch. The study reported that recreation use on the west branch would grow 56 percent between 1976 and the year 2000. According to state officials, since 1976 recreation has greatly increased on the west branch to the point that Great Northern has become concerned.

The company reports that between 156,000 and 175,000 people will visit the west branch in 1986 for white-water rafting, kayaking, camping, and fishing. Problems reported include illegal camping on company-owned lands, fire hazards for the company's commercial forest operations in the area, and collisions between private cars and the company's logging trucks on the company's logging roads. According to state officials, the company is developing a recreational management plan to address these problems and may impose user fees. These officials reported that the company does not at this time plan to restrict the number of people using its lands to get to the river, although the Department of Conservation official indicated that user fees could have that effect.

Resource Development

The federal study noted that the primary land use throughout the Penobscot River corridor was commercial timber harvesting, a major source of employment in the state. Commercial timber harvesting continues, and although strictly regulated by the commission, it is reported to have affected part of the east branch's wilderness values. In light of timber harvesting's importance in the state's economy, the federal study concluded that a realistic management plan for the Penobscot River should balance resource protection and recreation use with continued commercial forest use. The study suggested continued forest management in accordance with the commission's procedures and standards for protection districts, with some additional restrictions being placed on harvesting along the shores of classified wild segments.

As noted previously, the commission's regulations continue to be applied to much of the Penobscot's east branch (which strictly regulates timber harvesting with a 250-foot-wide zone along both sides). Where Great Northern's conservation easement is in effect (mostly on the west branch), timber harvesting is closely regulated within a 500-foot zone on both sides of the river. The commission requires that any logging activities within these zones leave a screen of trees along the river so that logging is not visible. A conservation official told us that no new logging roads have been built within Great Northern's 500-foot easement zone, but in other areas, more logging roads have been added since 1976. He said the recent appearance of logging roads along the western shore of the east branch (but outside of the 250-foot protection district) has affected the scenic views from the river. The federal study classified most of the east branch as wild. Previously, no active logging occurred in this area, and the riverscape appeared remote and wild.

Summary

According to state officials and documents, adverse changes have generally not occurred on the Penobscot River study corridor since 1976. Management and regulatory programs in place since 1976 protect the river's scenic and recreational values while allowing for compatible forest operations. New logging roads have appeared that detract from the scenic views along the east branch, but this development has occurred outside of the federal study's recommended boundaries for suggested timber harvesting restrictions. Recreational use on the west branch has increased much faster than predicted, posing new management problems for the timber company that owns most of the land. A major hydroelectric project on the west branch, the Big A Dam, was actively pursued and widely supported within the state. Although the Great Northern Paper Company withdrew its license application from FERC after a state regulatory agency denied a water quality certificate, we found mixed opinions on whether other hydropower projects will be proposed on the west branch in the future. Furthermore, Maine's governor and legislature revised key aspects of Maine's hydroelectric permitting authorities that could make it easier to obtain state approvals of such projects on the Penobscot in the future.

Pine Creek, Pennsylvania—Summary of Development

Background

The federal wild and scenic river study found that the 51.7-mile segment of the Pine Creek qualified as a scenic river in the national system.[1] The study found that Pine Creek possessed several outstanding natural and scenic values including its nationally recognized, state-protected 17-mile scenic gorge, a rugged, heavily forested area known as the Grand Canyon of Pennsylvania; scenic riverscape of forested mountains and picturesque villages; high-quality waters supporting valuable trout and warm-water fisheries; and other recreational values on the creek and surrounding state-owned forest and game lands.

In transmitting the study to the President in September 1978, the Secretary of the Interior reported that the Pennsylvania Department of Environmental Resources had conducted an independent study of the Pine Creek and was proposing that it be managed as a scenic river in Pennsylvania's Wild and Scenic Rivers program rather than being a component of the national system. In view of local community concerns about potential large-scale land acquisition under a scenic river program, the federal study found that the Pine Creek could best be protected and managed through limited acquisition and development of recreation facilities by the department and application of land use zoning controls by local governments. The study recommended that if Pennsylvania later wanted federal scenic river designation for the Pine Creek, its governor could apply for such status to the Secretary under section 2(a)(ii) of the act. The President concurred with this recommendation in transmitting the report to the Congress.

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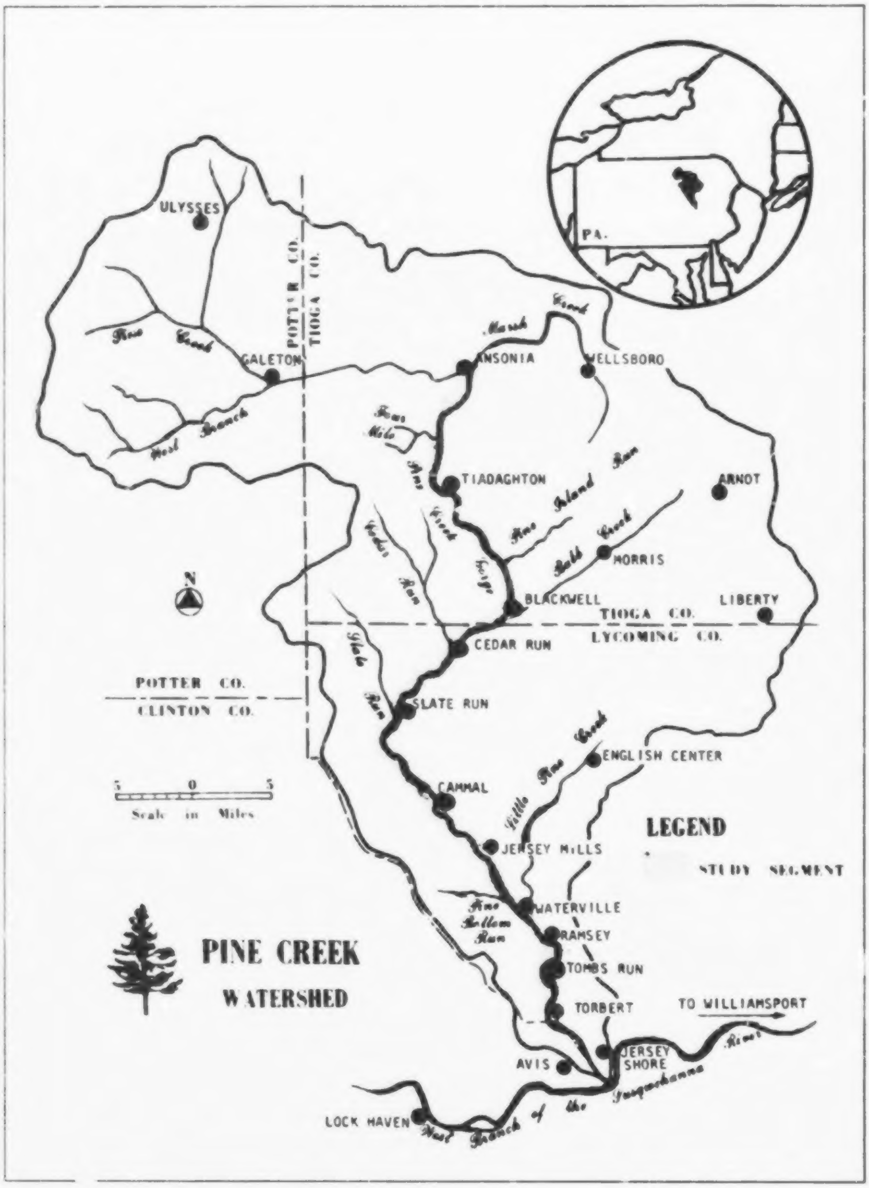
[1] Study authorized—Oct. 1968; study conducted by the Heritage Conservation and Recreation Service, Department of the Interior, and completed—Aug. 1978; study sent to the Congress—Oct. 1979

Figure VIII.1: The Pine Creek Wild and Scenic River Study Corridor


PA.
ULYSSES
POTTER CO.
TIOGA CO.
Pine Creek
GALETON
West Branch
Marsh Creek
ANSONIA
WELLSBORO
Four Mile
Pine Creek
TIADAGHTON
Pine Island Run
ARNOT
Babb Creek
MORRIS
Cedar Run
Gorge
BLACKWELL
LIBERTY
N
TIOGA CO.
LYCOMING CO.
CEDAR RUN
Slate Run
POTTER CO.
CLINTON CO.
SLATE RUN
ENGLISH CENTER
5 0 5
Scale in Miles
CAMMAL
Little Pine Creek
LEGEND
JERSEY MILLS
STUDY SEGMENT
WATERVILLE
Pine Bottom Run
RAMSEY
PINE CREEK
WATERSHED
TOMBS RUN
TORBERT
TO WILLIAMSPORT
JERSEY SHORE
AVIS
River
LOCK HAVEN
West Branch of the Susquehanna

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State Protection Efforts

Property owners along the creek not only opposed federal scenic river designation, they were also against state designation for much the same reasons. The owners feared that designation would bring more people to an already crowded recreation area with limited facilities and that the state would acquire people's property by condemnation. Because of this local public opposition, the department has not designated the Pine Creek, as of May 1986, as a component of the state's scenic rivers program.

Status of Developments

To obtain information on developments along the Pine Creek scenic river study corridor, we visited the area in May 1986. While there, we met with officials from the Department of Environmental Resources' scenic rivers program, the Lycoming County Planning Commission, the Pine Creek Preservation Association, and Brown Township to discuss changes in water projects, shoreline development, water quality, resource development, and recreational-use conflicts since the federal scenic river study was completed. We also gathered information on water projects from federal agencies. We learned that no change in forestry operations has occurred within the visual corridor. The federal study reported that Pennsylvania restricts timber harvest operations along the river corridor to protect natural values. Oil and gas exploration and extraction are now occurring on some state lands in the area, but the state will not permit any within the river's visual corridor. The effects of coal mining are discussed in more detail under water quality.

Water Projects

When the federal study was completed in 1978, the Pine Creek study segment was in a free-flowing condition. We learned from state and federal officials that this condition has not changed. Although three small Soil Conservation Service impoundments were located upstream of Ansonia, they did not affect flow conditions in the study segment, which ranged from fast white water to deep calm pools. Prior to 1978 the Corps of Engineers had considered the Cammal Lake project, a multipurpose dam on Pine Creek at the village of Cammal. This project would create a 4,900-acre reservoir reaching 23 miles upstream from Cammal, eliminating many of the creek's scenic and recreational values. However, in commenting on the draft study, the Corps' Baltimore district planning division chief stated that it was no longer considering this project at the request of the state. According to the secretary of the Pine Creek Preservation Association, many local people still worry that the Corps may yet build the Cammal Lake project. We discussed this with an official from the Corps' Baltimore district. He told us that the proposal will not be reactivated. We identified no other water projects or potential projects from our contacts with federal and state agencies.

Shoreline Development

The federal study classified the Pine Creek as a scenic river in part because its shoreline was generally free of development. Although the lower segment had a road and railroad paralleling it, they were said to be sufficiently screened from the river by vegetation. The character and amount of shoreline development has changed very little since the federal study, but a proposed development is causing some concern. The federal study noted a few private trailer camps and vacation homes along the Pine Creek but noted that 63 percent of the visual corridor's heavily forested 28,700 acres was state-owned forest land and natural and wild areas.

When we visited the area, we noticed many houses and trailers below Cedar Run. These structures were typically clustered in the small townships but also were noticeably present in between. We also observed that the state road and railroad paralleling the river were generally not screened with vegetation and would seem to be very noticeable from the river. Although these developments did not appear to be new, our impression seemed inconsistent with the federal study's conclusion that the shoreline was generally undeveloped and the corridor met the scenic, rather than recreational, classification criteria. State and Lycoming County officials said that very little new residential and vacation development has occurred in this segment since 1978 and that most of these houses and trailers were present when the river was studied. They also said that, other than bridge replacements (discussed below), no change had occurred to the roads or railroads since 1978. The department's scenic rivers program leader noted that the classification process is a subjective one, and apparently the federal scenic river study team judged the corridor's development to be consistent with scenic river criteria. He acknowledged that if the federal study process were repeated, the lower segment of the Pine Creek would likely be classified recreational.

The study noted that the townships had authority to apply zoning and some zoning controls were already in effect to control new shoreline development on private lands in the visual corridor. The study recommended that additional zoning techniques (such as building codes, floodplain zoning, utility rights-of-way, and siting regulations) be applied by the counties and the townships to maintain the area's present character while giving consideration to future growth in the communities.

Local governments have implemented additional land use controls since 1978, restricting developments on steep slopes and within the floodplain. Lycoming County officials told us that no structures may be built within the floodplain now, which they believe offers substantial protection to the more sensitive (and hazardous) areas along the creek. However, the Department of Environmental Resources' scenic rivers program leader told us of a proposed cabin development on Tom Mountain (around Ansonia) that in his opinion illustrates the weakness of local land use controls for protecting sensitive lands. Although the township's zoning ordinances prohibited such steep-slope development, its approval was given upon the condition that the developer would obtain state septic tank permits from the department's permitting office. However, he said that because the township granted approval, the department almost always grants the other permit, rather than deny it after local approvals have been obtained.

Since 1978 the state has acquired more lands from willing sellers along the creek, which state and county officials told us has improved public recreational access and camping facilities. These areas have been generally the undeveloped lands away from the villages. One former trailer camp that had been damaged by floods was bought and converted to a walk- or canoe-in fishing and camping area. The state acquired the remaining 500 acres of privately owned land in the Pine Creek Gorge at Tiadaghton and removed most of the cabins that were there at the time of the federal study. This area is now used for public fishing.

Water Quality and Solid Waste Management

Although the federal study found the Pine Creek's overall water quality to be "good to excellent," pollution was a problem. Although acid mine drainage continues to be a problem, other aspects of water quality have improved. At the time of the study, acid mine drainage from coal mining along the Babb Creek tributary was harming mainstream fisheries (the Babb Creek fisheries were eliminated by the acid mine drainage); inadequate sewage disposal treatment or septic tank capacities from some communities and from individual homes and cabins along the creek added wastes; and sedimentation from soil erosion, farmlands, dirt roads, and development on steep slopes was occurring.

The department's scenic river program leader told us that the acid mine drainage problem from Babb Creek is still a very serious water pollution threat to Pine Creek. About 2 years ago, an open pit mine operation produced a particularly large acidic discharge into Babb Creek, large enough to kill fish in Pine Creek. He told us that the state has not been as successful in cleaning up the acid mine drainage problem in Babb Creek as it could have been if the Pine Creek had been designated part of the national wild and scenic rivers system.

In other ways though, water quality problems have improved since 1978. Two communities above Ansonia that had waste treatment facility problems before 1978 are upgrading these facilities to correct the situation. Lycoming County officials took steps to inspect septic tanks of residences along the creek, identifying inadequate systems so they would be brought into compliance with state requirements. County officials told us that faulty septic systems are less of a pollution source to the creek now. Lycoming officials also told us of their efforts since 1978 to close down and reclaim open trash dumps within the Pine Creek corridor. Before 1978 the area had no organized solid waste management service, and litter and trash dumping was a major problem for local communities. The county has implemented a trash collection system in the corridor, reducing the visual and environmental effects of open dumps and littering.

Roads and Bridges

Below Cedar Run, two state roads closely parallel Pine Creek, with several bridge crossings. When the federal study was done, ongoing issues of concern to protecting scenic values were the state highway department's plans to replace seven bridges in the visual corridor and the possible widening of the two routes to improve access. The concern was with the new bridges' and roads' aesthetic impacts as well as their possible effect on increasing traffic in the corridor. Local officials worked successfully with the highway department to mitigate such impacts along the corridor. Prior to completion of the federal study, the Lycoming County Planning Commission formed a Scenic Highways Task Force to promote their interest in preserving the rustic and scenic nature of these roads. After a bridge was replaced that they thought too wide, they persuaded the state highway department to adopt design and engineering guidelines for the bridge replacements. The later replacement bridges have natural stone facing, which blends with the environment, and are no wider than two lanes. Some of the replacements have been completed, while others are now under construction or planned. Lycoming County officials are satisfied with the state's adoption of their recommended guidelines. They told us plans no longer exist to widen these roads within the corridor.

Recreational Conflicts

The federal study noted major concerns from townships and local residents with uncontrolled recreational activities, including crowded conditions on the river, conflicts between boaters and anglers, litter, sewage from cabins and vacation homes, and the general lack of revenue and resources to service the increasing crowds. Local officials noted these conditions have not improved and now believe designation may help to control problems. At the time of the study, the local governments especially were concerned that designation would worsen existing problems, increasing the area's popularity without state or federal government commitments to provide services to accommodate the visitors and regulations to protect the needs of local residents. These concerns, coupled with concerns over government acquisition or imposition of burdensome regulations on private property, helped defeat both the federal and state scenic river designation.

Since 1978 the problems of Pine Creek's "overpopularity" and resultant burdens on local governments and residents continue to be a major concern. The Brown Township supervisor told us that local townships are having many problems managing conflicts between growing numbers of recreationists (snowmobilers, skiers, canoeists, anglers, and campers) because the number of law enforcement personnel is inadequate. He said the local townships could not afford to pay for effective management of the crowds visiting the corridor. He would prefer that the state designate the corridor for recreational use and management but that it is essential that the state manage public recreational use. The secretary of the Pine Creek Preservation Association now supports state (or federal) scenic river designation, in part to solve the problems of uncontrolled public use. With so many people using the river area for canoeing, fishing, skiing, etc., more public access and facilities are needed.

Summary

Although the Pine Creek is not a component of Pennsylvania's scenic rivers system, the state and local governments have taken steps since 1978 to protect the corridor's resources and improve conditions that were considered problems by the federal study. As a result of state opposition, the Corps of Engineers dropped its proposal to build a dam and major impoundment at Cammal. The state has bought more land along the river to protect sensitive areas and provide more public access. Local governments adopted land use controls to better restrict building in floodplains and on steep slopes, although a state official expressed some reservations about the effectiveness of local controls. Improvements have also been made in solid waste management and sewage disposal, although significant pollution remains in one tributary from acid mine drainage. The most significant development has been the rapid increase in public recreational use. This has caused problems for local communities and landowners to the point that support is gaining among area residents for state scenic river designation to help resolve the situation.

Suwannee River, Florida and Georgia—Summary of Development

Background

Authorized under the 1968 Wild and Scenic Rivers Act, the Suwannee federal river study found about 290 miles to be qualified for inclusion in the national wild and scenic rivers system, including three tributaries of the Suwannee—the Ichetucknee, Santa Fe, and the Withlacoochee rivers.[1] The federal study divided the corridor into five segments—two wild (30.4 miles), two scenic (169 miles), and one recreational (90 miles). The study described the river as "abundantly endowed with natural resources, steeped in history, and located at the threshold of one of the world's greatest tourist meccas, the Suwannee River remains undeveloped and unspoiled by man." Distinctive for many reasons, the river's outstanding natural and scenic values changed as its dark waters flowed from its source in the great Okefenokee Swamp to the heavily wooded and marshy stretches in Florida, where a vast system of clear springs fed by Florida's huge aquifer augmented the Suwannee's flow. The river's mouth traversed a myriad of tidal marshes draining into the Gulf of Mexico.

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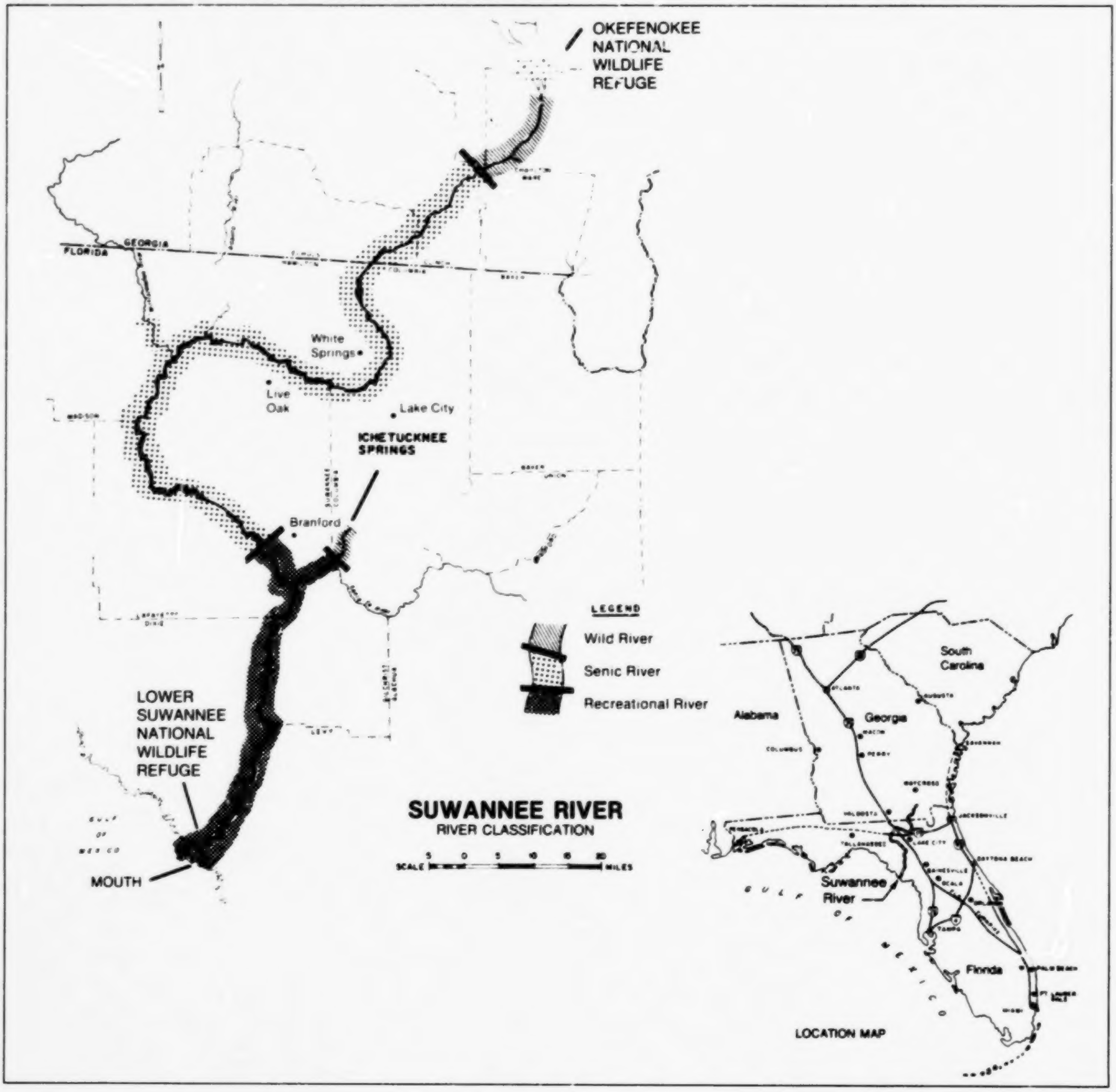
[1] Study authorized—Oct. 1968; study conducted by the Bureau of Outdoor Recreation, Department of the Interior, and completed—Dec. 1973; study sent to the Congress—Mar. 1974.

Figure IX.1: The Suwannee Wild and Scenic River Study Corridor


OKEFENOKEE NATIONAL WILDLIFE REFUGE
GEORGIA
FLORIDA
White Springs
Live Oak
Lake City
ICHETUCKNEE SPRINGS
Branford
LEGEND
Wild River
Senic River
Recreational River
LOWER SUWANNEE NATIONAL WILDLIFE REFUGE
MOUTH
GULF OF MEXICO
SUWANNEE RIVER
RIVER CLASSIFICATION
SCALE 5 0 5 10 15 20 MILES
South Carolina
Alabama
Georgia
Suwannee River
Florida
LOCATION MAP

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The federal study recommended that the states of Florida and Georgia take responsibility to preserve the Suwannee's values. Strong local opposition was expressed to a 1970 Interior Department proposal that the federal government acquire lands and develop the river for wider recreational use. The study indicated that the states could apply to the Secretary of the Interior for federal designation under the 2(a)(ii) process, but permanent state administration was expected. In commenting on a draft of the federal study, both Florida and Georgia agency officials supported its recommendation for nonfederal management and protection of the Suwannee. However, they raised concerns about the states' potential costs, particularly to implement the federal study's ambitious land protection and recreational development goals. In transmitting the report to the Congress, the Acting Assistant Secretary of the Interior recommended that the Suwannee be managed by the states of Florida and Georgia.

State and Local Protection Efforts

A joint plan between Florida and Georgia for managing the Suwannee River, as envisioned by the federal study, was never developed. Georgia did not designate its segment of the Suwannee (about 18 miles)[2] under its scenic rivers program nor has it acquired lands or scenic easements on the corridor. According to state officials, Florida's governor decided not to seek the 2(a)(ii) federal designation. Since the late 1970's however, Florida has implemented several programs to increase protection of the Suwannee's scenic and natural resources. In addition, in 1979, the U.S. Fish and Wildlife Service established the 54,000-acre Lower Suwannee National Wildlife Refuge, which when complete will protect the last 22 miles of the river.

In 1979, Florida designated the Suwannee River as an "Outstanding Florida Water," because of its exceptional ecological and recreational significance. As an Outstanding Florida Water, the Suwannee receives special water quality protection through the Department of Environmental Regulation's water discharge permitting activities. The purpose of the Suwannee River designation was to prevent deterioration of its water quality. The department is prohibited from issuing permits for future pollution that would "significantly degrade" the river's water quality.

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[2] Twenty-eight miles of the Suwannee River (starting with its headwaters) are wholly within the Okefenokee National Wildlife Refuge, administered by the U.S. Fish and Wildlife Service.

Florida has also acquired lands along the Suwannee corridor since 1981 under its Save Our Rivers and the Conservation and Recreation Lands programs. The Save Our Rivers program is administered by the Suwannee River Water Management District, while the second program is the responsibility of the Department of Natural Resources. The Save Our Rivers program authorizes the management district to acquire lands or easements for various water management purposes as well as to enhance natural, aesthetic, recreational, or hydrological values. The department's program authorizes purchase of lands or easements for environmentally endangered tracts as well as for a broad range of other public purposes. Both acquisition programs are financed by trust funds. The department's trust fund gets revenue from state excise taxes on oil, gas, solid minerals, and phosphate development in Florida. From its inception in 1979 through July 1985, this fund totaled about $108 million. The Save Our Rivers program is financed by the Water Management Lands Trust Fund, which gets revenues from real estate transactions. To date, the state has allocated $420 million to the fund, 9.8 percent of which will be allocated to the Suwannee River Water Management District. The district matches a portion of the state funds with revenues from its own tax authority. As of August 1984, the management district has bought 16,000 acres along the Suwannee River.

In 1981 the Suwannee River Resource Planning Management Committee (appointed by the governor under a program authorized by the legislature) adopted the Suwannee River Management Plan. The plan adopted 35 recommendations addressing land use and water management issues along the corridor in response to inappropriate development that was causing flood damage, water pollution, and loss of habitat and scenic beauty. More recent land use planning and management programs have been initiated that will also affect the Suwannee River corridor. In 1984 and 1985, in order to manage Florida's high rate of population and economic growth, the legislature enacted measures establishing a multilayer, comprehensive land use planning and management process. Beginning in 1986, an integrated, "top-down" system of plans are to be developed at the state, regional, and local levels in Florida. Statewide policies pertaining to land use, water resources, and conservation of important natural resources will be integrated into regional and local plans. Local plans are to contain a conservation element to protect environmental resources such as rivers, wetlands, and floodplains. The local land use management and environmental protection objectives of the 1981 Suwannee River Management Plan will be integrated into the new local plans.

The Florida legislature established five water management districts, organized around the major river basins in the state, to develop rules implementing a surface water management program. In 1986 the Suwannee River Water Management District planned to begin implementation of its management program and regulations to reduce flood damages and protect the quantity and quality of water resources in its jurisdiction. The purpose is to control and direct new shoreline development to reduce its impact on drainage conditions so that flood hazards to existing properties are not increased. The regulations require permits for and apply development standards to proposed residential, transportation, commercial/industrial, farming, and forestry developments along the Suwannee River. These regulations will apply to a zone that has been determined to be the most prone to hazardous flooding conditions, generally within 1 mile of the river.

Status of Developments

In order to obtain information on development and current conditions along the Suwannee River study corridor since 1974, we interviewed in person or by telephone various officials in Georgia and Florida. We telephoned officials in Georgia's Department of Natural Resources, who told us that the 18-mile Suwannee River segment in Georgia outside of the Okefenokee National Wildlife Refuge is not managed or monitored by the state. We met with Florida state officials responsible for management and protection activities on the corridor to discuss current conditions and Florida's efforts. They included the executive director and assistant executive director for planning, Suwannee River Water Management District; an official from the Division of Recreation and Parks, Department of Natural Resources; officials from the Department of Environmental Regulation; an environmental specialist from the Department of Natural Resources' Division of State Lands; and the planner for the Suwannee River, Bureau of State Land Planning, Department of Community Affairs.

We met with two representatives of The Nature Conservancy working with Florida officials to plan and carry out a land protection program for key tracts along the Suwannee River. We interviewed the Suwannee River Coordinator of Florida Defenders of the Environment, Inc. She participated in the 1981 resource management planning committee and has monitored conditions on the study corridor starting before 1974. In order to observe some of the developments affecting the Suwannee River in Florida, we toured part of the corridor in April 1986. We reviewed documents for information on developments as well as Florida's management and protection efforts. We also contacted federal agencies, including the U.S. Fish and Wildlife Service (FWS), to obtain information about any water projects or other federal land acquisition and management activities along the corridor since 1974. Since we found there had been no negative change within the corridor regarding roads and utilities, this summary does not address this area. The Suwannee River Water Management District regulates road and bridge construction within the floodplain to insure that flood waters are not obstructed.

Water Projects

The federal study found no water resource development projects on the Suwannee River, noting that hydroelectric and flood control projects were not economical or practical. Since then, no new water projects have been built or are currently planned. At the time of the federal study, some Corps of Engineers' authorized navigation projects at the corridor's lower end were inactive. The study concluded these projects would be inconsistent with protecting the river's natural and scenic values.

We discussed the current status of these projects with Corps officials. They told us that the channel improvements between Ellaville and Derrick Island Gap (at the river's mouth on the Gulf of Mexico) had been essentially completed in 1974 but that the Corps is no longer dredging the channel at the Gulf because of the difficulty of keeping it open and the lack of space to place dredged material.

In 1979 the Corps completed a draft environmental impact statement on a water supply analysis for southwest Florida. One of its alternatives was to divert 350 million gallons of water per day from the Suwannee to supply the Tampa/St. Petersburg area (which lies outside of the management district basin). After the management district officials voiced strong opposition to this alternative, the Corps dropped the idea.

We identified no other water projects affecting the Suwannee River since 1974.

Shoreline Development

The federal study reported that much of the shoreline, although privately owned, was "unbroken forested banks" of great scenic beauty. Current conditions are mixed, according to state, federal, and environmental officials. Although public ownership has increased, other corridor areas continue to experience increasing development, especially the scenic segment. Some efforts are being directed toward protecting the remaining scenic areas.

In 1973, 85 percent of the shoreline was owned by timber producers, corporations, or individuals. Vacation home development on the lower 81 miles of the corridor led in part to its recreational classification (although development was relatively scattered and natural values were largely intact), and 50 miles of the corridor had been subdivided for additional residential development.

Since 1973 shoreline development has not occurred in some areas of the corridor. According to a Georgia state fisheries biologist, major timber-producing companies own much of the shoreline outside of the national wildlife refuge. They are not timbering here, nor have they developed these lands. In addition, the FWS created a second national wildlife refuge, the Lower Suwannee, at the river's terminus on the Gulf of Mexico. This proposed 54,000-acre refuge, extending 22 miles upriver, will complement the protection at the river's headwaters in the Okefenokee National Wildlife Refuge. FWS considered the lower Suwannee river, its delta, and adjacent coastal marshes as one of the few remaining unspoiled river-delta estuaries in the country. The refuge will protect these lands from increasing pressures for intensive timber production and residential development. Since 1979 FWS has acquired about 37,500 acres of the planned refuge lands.

Shoreline conditions have not fared as well along many parts of the Suwannee in Florida since 1973. According to a 1984 field inventory by The Nature Conservancy, second-home riverfront developments have mushroomed along many miles of river banks that were undeveloped in 1973. Most of the newer development has occurred below Branford (the recreational segment in the federal study), but an increasing number of developments are found on upstream areas (scenic segment). Recently built houses line the river in some developments, while others have placed grid systems of roads and sold the lots for future construction. The Suwannee River coordinator for Florida Defenders of the Environment noted that 90 percent of the vacation homes and trailers are within the floodplain and that between 1981 and 1985, the number of residential lots grew from 10,200 to 33,000.

When we toured the Suwannee River study corridor in April 1986 (between Branford and the northern edge of the Lower Suwannee wildlife refuge), we observed clusters and longer stretches of recently constructed houses, cabins, and trailers on the shore. These structures were associated with tree-clearing, roads, satellite dishes, above-ground septic tanks, piers, and seawalls altering the shoreline's natural conditions.

State and conservation group officials told us of the land management and protection efforts underway that they hope will stem the recent trend of rapid shoreline development along the Suwannee and bring much of the remaining high-quality natural areas under permanent protection. According to the management district's executive director, his office is planning on using Save Our Rivers funds to buy about 75 miles of shoreline from major landowners in Hamilton, Columbia, and Suwannee counties. The Department of Natural Resources has bought environmentally sensitive tracts identified by The Nature Conservancy along the corridor. Other tracts have been acquired to expand public recreational facilities and access. Negotiations are underway to buy other significant natural areas identified by The Nature Conservancy and state management agencies.

These officials indicate that purchase of lands or easements will be the best strategy to protect some of the corridor's most significant natural and scenic areas. However, the implementation of the management district's land use permit and development standards for the 100-year floodplain is expected to slow down and even discourage shoreline development. The new procedures, implemented in 1986, are expected to make future development more compatible with protecting the river's hydrologic and natural values. The district's regulations for houses on lands subdivided after January 1, 1985, require a minimum 75-foot setback from the river, restrict the clearing of vegetation within a 300-foot zone, and do not allow the use of fill for roads, driveways, mounded septic tanks, or foundations without an engineering study and certification that these alterations are floodproof and will not increase the area's flood elevation. Officials from the management district told us that these standards will make it impractical in some areas to construct the correct septic tank structure, and thus new homes may not appear. Developers who want to subdivide and sell land for residential development face strict performance and design criteria intended to preclude increases in flood hazards, water pollution, and alterations of drainage conditions as well as to preserve fish and wildlife. New subdivisions are required to install systems to control runoff, meet state stormwater discharge standards, replace wetlands destroyed by the development, preserve or replace floodwater storage areas, and minimize erosion.

Although the management district's floodplain regulations are not expected to fully protect the Suwannee River's open space and scenic beauty, the land use planning and zoning activities of local governments could address these concerns. Since the 1981 Suwannee River Management Plan recommended local land use zoning ordinances to protect the corridor's natural and scenic qualities from uncontrolled development, the counties along the corridor adopted them. However, these ordinances have not been fully implemented. This situation is expected to change as the state's recent "growth management" strategy for comprehensive and integrated land use planning and control is implemented by state, regional, and local governments. County and regional governments will be required to develop and implement comprehensive land use plans that integrate state policies for land use and conservation of significant natural and recreational resources. The Department of Community Affairs plans to use the guidance provided by the Suwannee River Management Plan as the framework for overseeing development of local comprehensive plans. Once local plans are adopted, all local government action (including development regulations) must be consistent with the local plan. The department is offering technical and financial assistance to local governments preparing and implementing their local plans. If local governments do not develop plans that meet the state's requirements, certain state-funded projects and grant programs, such as outdoor recreation and public works improvement, can be cancelled.

Water Quality/Resource Development

The 1973 federal study briefly discussed regional phosphate mining and timber production activities in Florida (phosphate mining in Hamilton County) and Georgia. It noted that the Suwannee River corridor was "biologically and chemically free of pollutants." Today, commercial timbering in the corridor is controversial, and concerns have grown over pollution from phosphate mining. At the time of the study, the most serious phosphate pollution problem was found on a tributary (Swift Creek) outside of the study corridor. Pollution was caused by phosphate strip-mining and processing operations in Hamilton County. However, the study reported that steps had been taken to control the pollution. At the time, no resource development pressures were directly affecting the river corridor or its water quality, but the study noted that as the need for forest products and mineral resources increased, the unspoiled character of the river would change.

Since 1973 timber production along the corridor in Florida has increased, but opinions are mixed about its impact on the river. According to The Nature Conservancy's 1984 resource analysis of the corridor, a major threat to scenic and natural values is large-scale timbering and conversion of the floodplain to managed pine plantations in sparsely populated Columbia and Hamilton counties. Timber clear-cutting has proceeded in many cases right up to the riverbanks. However, the management district's executive director told us that, except for some small-scale operations, timber operations along the corridor are consistent with state requirements. Florida established "best management practices" for forestry operations to guide their water and land management activities. The management district also adopted regulations in 1984 to control timber activities along the Suwannee River. The management district's regulations prohibit timber cutting within 75 feet of the river, and limit tree-clearing within a 300-foot buffer strip. The executive director also noted that four major floods since 1974 have discouraged timber producers from converting shorelines to managed pine plantations, since during floods their "investments" would wash away.

According to state and environmental group officials, increased phosphate mining and processing in Hamilton County are causing more water quality problems for two Suwannee tributaries (Swift Creek and Hunter Creek) and concerns for the Suwannee river. One producer, Occidental Chemical Company, is mining and processing related chemical products at four sites in the county and is proposing to expand mining operations in more wetland areas, which state officials said would affect the Suwannee's water quality. Pollutants include sulfate, fluorides, phosphorus, nitrates, ammonia, and suspended solids, according to state agency information.

In 1974, under a state review of large-scale developments in Florida, Occidental Chemical agreed with the state not to mine phosphate reserves or deposit industrial wastes on (1) the Suwannee's 100-year floodplain, (2) the floodplains of tributaries for at least 0.5 mile upstream from their confluence with the Suwannee, and (3) within 500 feet of major springs or sinkholes.

New phosphate reserves have been identified in Osceola National Forest, east of the Suwannee River. Concerned that mining activities in this area would further threaten the Suwannee's water, state officials sought a ban from the federal government against opening Osceola to phosphate mining. Florida's congressional delegation obtained federal legislation prohibiting such development in 1984.

In 1979 Florida designated the Suwannee River as an Outstanding Florida Water to protect its exceptional recreational and ecological values. The designation prohibits the Department of Environmental Regulation from issuing permits for discharge activities on tributaries that would significantly degrade the Suwannee's water quality. However, at that time, a 2-year designation lapse provision was provided for the 40-

mile segment adjacent to Occidental Chemical's Hamilton County operations in response to the company's concern about the impact on their future operations[3] and the "vagueness" of the designation. Even though Occidental Chemical legally challenged the designation in 1979, by 1980 the company decided to support the state's decision, and the designation was made permanent.

The Department of Environmental Regulation has still not adopted specific standards defining specific discharge limits that the company will have to comply with for expanded phosphate mining and processing operations in the Suwannee River basin. According to a department official, final standards may not be adopted for 2 years or longer. In the meantime, the company has applied to the department for a permit to discharge in a third tributary (Roaring Creek), and negotiations are underway with the Environmental Protection Agency to reduce current discharges into Swift Creek.

Occidental Chemical has applied to the Corps of Engineers for a permit to mine in new wetland areas in Hamilton County. The Corps completed an Environmental Impact Statement of the proposal in February 1986. Responding to concerns expressed by state and federal agencies and the public about the impacts on area wetlands and the Suwannee River's water quality, the Corps is considering a reduced-scale phosphate mining alternative. According to state comments, this alternative should better protect the most significant wetlands and preserve the Suwannee's water quality while permitting mining on 5,686 wetland acres, rather than the company's proposed 9,264 wetland acres. The Corps will not decide on issuing the permit unless the company receives the state's permit, which will be analyzed under the Outstanding Florida Water regulations. As of June 1986, the company had not applied to the department for the permit. State and conservation group officials raised many questions about the water-quality impacts of future phosphate mining activities on the Suwannee River. According to a state official, existing operations substantially affect water quality on the river.

Recreational Use

The federal study noted that the Suwannee River's recreational potential was "not now being fully realized." Public recreational facilities

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[3] The company's mining and processing activities already had state permits issued before the 1979 designation, so they were "grandfathered-in."

were minimal, but the federal study cautioned against extensive development. According to state officials, since the federal study was completed in 1973, recreational use has increased in Florida's segment and, with it, negative effects. There have been problems with campers trespassing on private lands; too many people swimming, diving, and fishing in the ecologically sensitive springs, which has damaged them; and high-speed boats creating wakes that have eroded the shoreline.

According to a Department of Natural Resources official, the state manages state parks on the Suwannee to control the number of people and thus limit their impact on the natural and scenic resources. The state would like to increase recreational facilities for campers and canoeists, but in view of the river's sensitive natural areas, the state is not interested in intensive recreational development. Florida's land acquisition efforts will be used in part to acquire and develop more recreational sites.

Summary

In the 13 years since the federal study on the Suwannee River was completed, conditions have changed considerably, according to state, federal, and environmental group sources. Water projects have not been built; in fact, major proposals have been actively opposed by the public and state officials who are committed to maintaining the corridor's free-flowing, natural condition. Shoreline development and the subdivision and sale of lots for vacation homes and trailers increased substantially in Florida. This had prompted federal, state, and private efforts and programs to accelerate since 1979 to protect remaining undeveloped lands. The FWS established a wildlife refuge that will acquire and protect the last 22 miles of the river to its mouth on the Gulf of Mexico. Florida agencies have undertaken major land acquisition efforts in cooperation with The Nature Conservancy to protect significant natural areas. In addition, land use regulatory authorities are being implemented or will be refined at regional and local agency levels that may limit development within the river's floodplain and scenic corridor. Water quality on the river for the most part remains as good as it was at the time of the federal study in 1973. As a result, the river qualified for state designation as an Outstanding Florida Water. However, phosphate mining and processing in Hamilton County has increased and is the source of major state and public water quality concerns on the Suwannee. Although the state's water quality designation implies significant regulatory authority to protect the resource from pollution, problems remain in fully implementing this approach. Recreational use in Florida has increased enough in the past 13 years to be considered a threat to the river's scenic and natural values. However, the state is acquiring and developing more recreational facilities to accommodate public demand and intends to manage recreational use in order to minimize impacts on the river's resources.

Upper Iowa River, Iowa—Summary of Development

Background

The Upper Iowa federal river study found that 80 miles of the Upper Iowa River qualified for the national system.[1] The study classified two scenic (51 miles) and one recreational (29 miles) segments. The Upper Iowa possessed many of the outstanding natural and scenic values needed to qualify, including its scenic course through a beautiful, changing landscape of bluffs, palisades, and pastoral farm lands, clean water, and an excellent sport fishery. Shoreline development was very limited since the region was lightly-populated, and agriculture was the principal land use and economic activity.

In transmitting the study to the Congress in May 1972, the Secretary of the Interior noted that widespread public support existed for protecting the Upper Iowa, but landowners along the river were opposed to federal scenic river designation. He reported that the state of Iowa wanted to administer the river area and concluded that state administration was the best approach. The Secretary recommended that once the state had implemented a program for assuring adequate protection of the Upper Iowa, it could be included in the national system under section 2(a)(ii) of the act.

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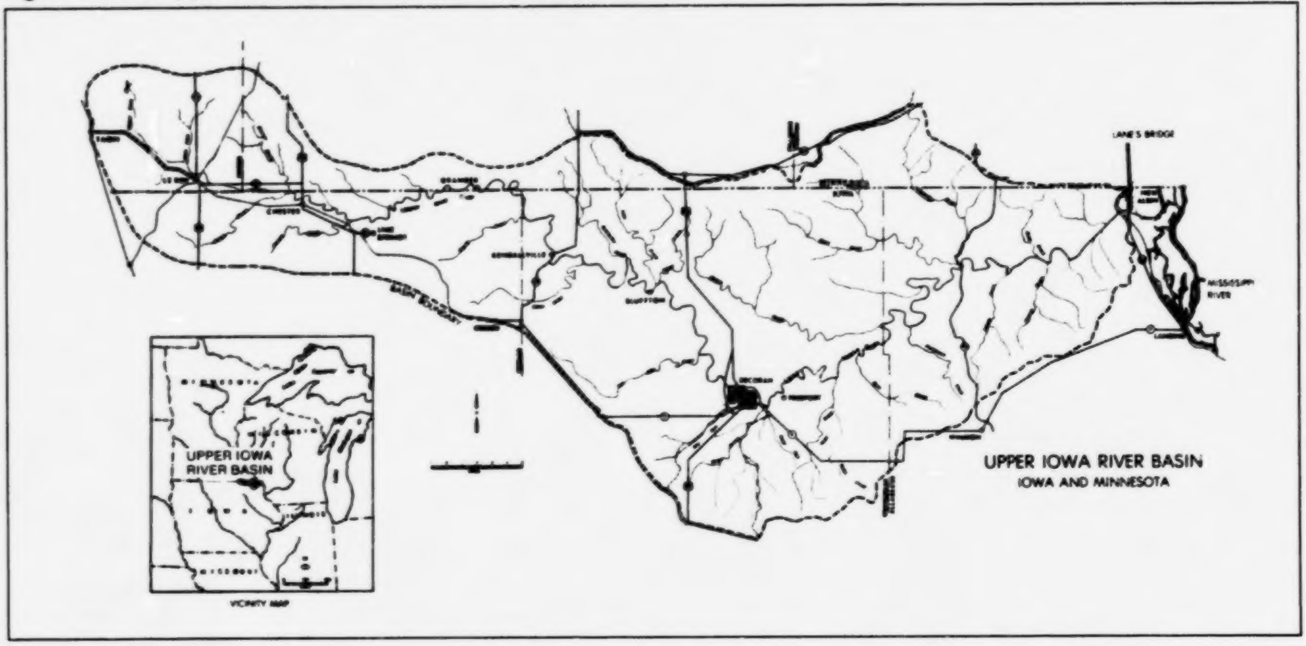
[1] Study authorized—Oct. 1968; study conducted by the Bureau of Outdoor Recreation, Department of the Interior, and completed— Feb. 1971; study sent to the Congress—May 1972.

Figure X.1: The Upper Iowa Wild and Scenic River Study Corridor



State Protection Efforts

According to a 1984 study,[2] state concerns with the federal study and potential federal designation and management of the Upper Iowa River prompted enactment of the Iowa Scenic Rivers Act in 1970. The Upper Iowa was the only river protected pursuant to the law because the state apparently wanted to provide a management alternative to federal action. However, local landowners and governments became alarmed that state scenic river management would mean use of condemnation to acquire lands, as well as vast increases in people coming to the area for recreation, which would cause problems with trespass, damage, and land use restrictions on farmers. In the face of strong local opposition and the inability to get increased federal financial assistance, the state backed away from its management proposal in the early 1970's, although a 1981 state report noted that it had bought some 22 miles of riverfront property from willing sellers as funding had become available.

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[2] Robert C. Hoffman and Keith Fletcher, America's Rivers: An Assessment of State River Conservation Programs, (River Conservation Fund, 1984).

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In 1984 the Iowa legislature repealed the 1970 Scenic Rivers Act and enacted the Iowa Protected Waters Act. The 1984 act did not include the Upper Iowa River as an area to be protected. The Iowa Conservation Commission had earlier determined that strong local opposition persisted against formal state protection and management and recommended against the legislature's designating the Upper Iowa as a Protected Water. According to the commission's scenic rivers program coordinator, although the Upper Iowa is considered the state's most scenically diverse river and there is strong interest in managing it under the new law, in view of local opposition, it was believed to be better to focus efforts on other rivers that had support for protection. In the meantime, he said that other state regulations and programs (such as water quality) help protect the Upper Iowa.

Status of Developments

To obtain information on developments along the Upper Iowa River study corridor, we interviewed by telephone officals from the Iowa Conservation Commission, the state's water quality office, and the Iowa Wildlife Federation. We gathered additional information about water projects from FERC, the Corps of Engineers, and SCS. Because we found there has been no change in resource development (agricultural land use) along the river, this area is not separately addressed.

Water Projects

At the time the river was studied, two state-owned dams had been built for hydroelectric purposes but abandoned by their developers before 1951. According to the scenic rivers program coordinator, no dams or other water projects have been constructed on the Upper Iowa study corridor since 1971. The federal study noted that part of one dam had been removed by blasting. In part because these dams created impoundments on the river, this segment was classified recreational. Flood control modifications and channelization of the river starting about 1.5 miles below Lane's Bridge and continuing to the confluence with the Mississippi River disqualified the last few miles of the Upper Iowa.

The state's scenic river program coordinator told us that when funds are available, the state plans to completely remove the 30-foot dam that was partially removed before 1971. He said removal will prevent the river from altering its channel, improve riverflow, solve boating safety problems, and improve the fish and wildlife habitat.

Contact with the Corps revealed no planned projects. Contact with SCS revealed two projects (one under construction, one planned) in

Allamakee County, neither of which is located directly on the Upper Iowa. According to SCS officials, these projects will not affect the Upper Iowa's flow conditions.

In 1983 a 60-foot limestone bluff near Kendallville collapsed into the river. According to a newspaper account, this temporarily dammed the river with rubble estimated to be 15 feet high and 100 feet across and the river cut a new channel around the fall, affecting an adjacent farm. A state official told us the collapse was not caused by human activity.

Shoreline Development

In 1971, according to the study, only 2 percent of the shoreline was developed for residential, commercial, or industrial uses. Since that time, the shoreline has changed very little, according to state and Iowa Wildlife Federation officials. At the time of the study, agriculture and forestry were the primary land uses (97 percent), and the federal study reported little pressure that would convert these lands to residential, commercial, or industrial development. Although the agricultural and forest land uses were noted as compatible with the scenic values of the corridor, problems existed with overgrazing, soil erosion, unstable banks, and uncontrolled entry of livestock into the river. Another problem was from farmers' installing barbed-wire or electrical fences across the river at some points to prevent their cattle from wandering. This created hazards to the public boating on the river.

Officials from the commission and the Iowa Wildlife Federation told us very little structural development had occurred along the Upper Iowa since 1971, other than a few houses and the clearing of some woodlands near Bluffton for agricultural purposes. A state official told us that the river's scenic vistas are generally unchanged and the problems with cattle entering the river and cattle fences obstructing the river have improved considerably since 1971.

Water Quality

In 1971, although water quality was generally high, the federal study noted that the Upper Iowa had some problems stemming from agricultural land use. State officials told us that while the problems continue, plans exist to address them. Although analysis was incomplete, the federal study noted that runoff from fertilizers and livestock wastes were polluting the river.

An official from Iowa's Department of Water, Air, and Waste Management told us that the Upper Iowa River has water quality problems caused by soil erosion from cultivated farmlands and livestock wastes. He said the state has efforts underway to improve these pollution problems. The state also designated the 80-mile Upper Iowa study corridor as a state High Quality Resource Water in 1985. This requires the state not only to apply regulations to protect the river from losses to its chemical qualities but also to preserve and enhance the river's physical qualities and biological habitats.

Roads and Utilities

In 1971 several roads and powerlines crossed the Upper Iowa. Since that time, according to a state official, minor changes have not degraded scenic values. Bridges serving farm roads frequently crossed the river, but the federal study noted that these were generally unobtrusive and did not detract from the river's scenic qualities. Some problems were noted where herbicide spraying to reduce vegetation for roads and powerline rights-of-way had eliminated screening of these developments from the river.

An official from the commission told us that no roads have been developed along the corridor since 1971, although some bridges had been replaced or refurbished but not widened. He also told us that a powerline crossing was rerouted in 1977 to a location where an existing powerline crossed and that the town of Decorah, also on the recreational segment, expanded its storm sewer system. Some of the pipes from the system now enter the river from the town.

Recreational Use

In 1971, although the highly scenic Upper Iowa was considered excellent for canoeing and fishing, use of the river was constrained by the lack of publicly owned lands where people could get to the river. At the time of the study, recreation was hampered by few public access points and private agricultural land uses (such as cattle fencing across the river) that created conflicts between river users and local landowners. The state was in the process of acquiring lands to provide public access for fishing and boating.

According to the state's scenic rivers program coordinator, the Upper Iowa is now very popular for canoeing, and commercial canoe rentals thrive between Kendallville and Decorah. He said the state has acquired more public access points since 1971, and thus the earlier lack of public access has improved. He indicated that although the river is frequently used for canoeing, its use is far from reaching its carrying capacity.

Summary

We identified no developments on the Upper Iowa that indicated a decline in its overall scenic and natural values since 1971. According to one state official, aside from the collapse of the 60-foot limestone bluff and the conversion of one forested area to cropland, the scenic vistas along the river are unchanged. Despite persistent local opposition to federal or state scenic river designation, actions have been taken to protect the river. For example, state-owned lands for fishing and canoeing access have increased; the state acquired 22 miles of shoreline for protection and management; and the state has taken steps to improve the river's water quality and plans to completely remove a 30-foot dam that now threatens to rechannelize the river. Although the state has so far been unsuccessful in placing the Upper Iowa under its scenic rivers programs, we were told by state officials that the future protection of this resource remains a high priority.

Wisconsin River, Wisconsin—Summary of Development

Background

The federal wild and scenic rivers study found that about 82 miles of the lower Wisconsin River in southwest Wisconsin qualified for inclusion in the national system.[1] The study recommended that the state of Wisconsin and local governments protect the area, rather than the federal government. The study further recommended that the state apply for federal designation under section 2(a)(ii) of the act. Reasons cited against federal action included state ownership or scenic easements of 40 percent of the corridor's acreage for parks, wildlife areas, and public access sites and the state's plans to develop the area's recreational potential. Although public support for protecting the river's natural qualities was noted by the federal study, local landowners were generally opposed to federal designation. The President concurred with these recommendations in transmitting the report to the Congress.

The study divided the 82-mile corridor into three segments— two scenic segments totaling about 43 miles separated by a 39-mile recreational segment. The 8-mile segment below the dam at Prairie du Sac was not qualified under the federal criteria because of questionable water quality and extensive shoreline and road developments. The corridor was found to be essentially natural and scenic in character, with portions of the shoreline appearing primitive and remote from man's influence. The lower Wisconsin possessed outstanding wildlife, recreational, and historical values.

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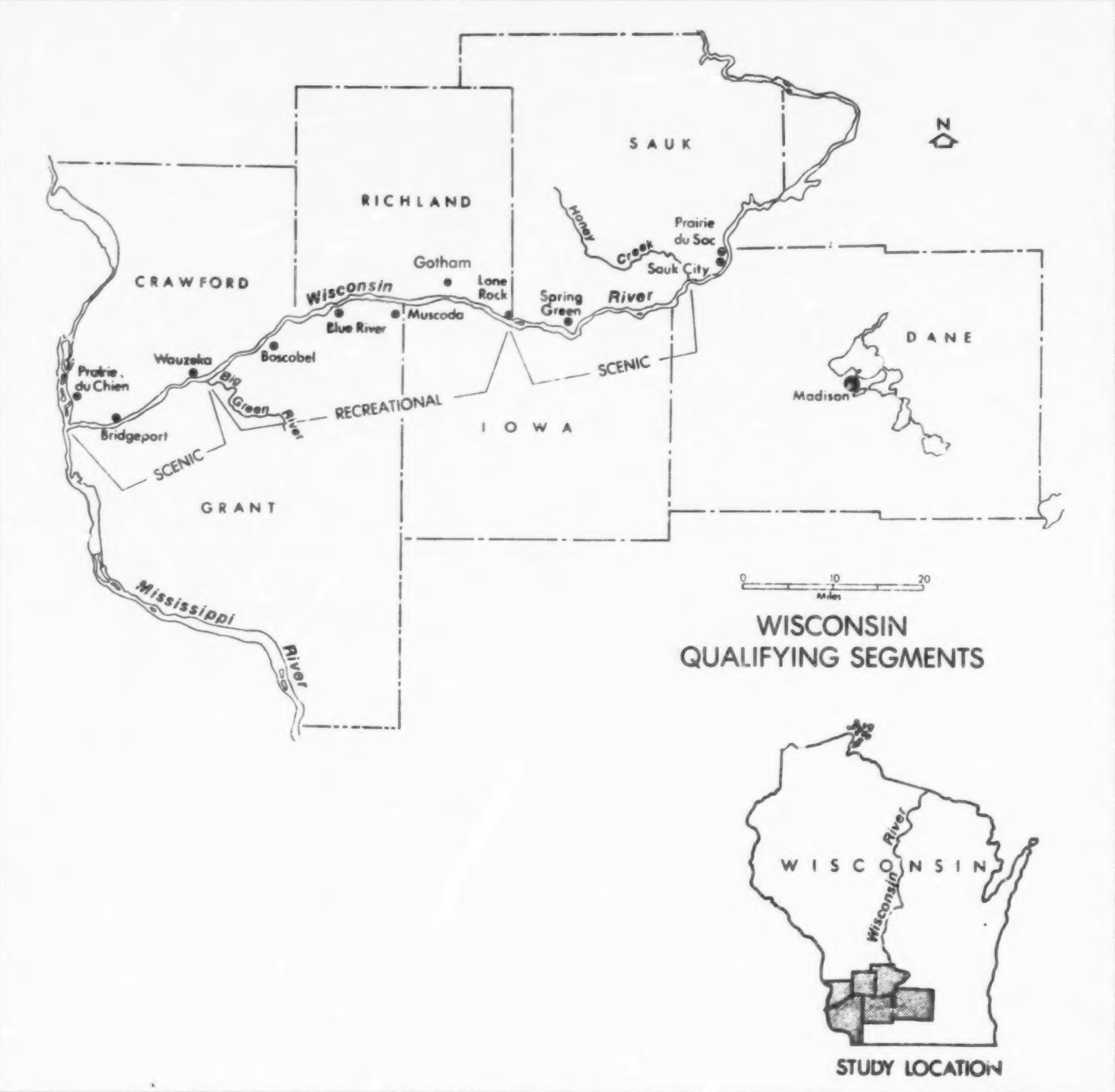
[1] Study authorized—Jan. 1975; study conducted by the National Park Service and the Forest Service and completed—Jan. 1979; study sent to the Congress—Oct. 1979.

Figure XI.1: The Wisconsin Wild and Scenic River Study Corridor


SAUK
RICHLAND
CRAWFORD
DANE
IOWA
GRANT
N
Honey Creek
Prairie du Sac
Sauk City
Gotham
Lone Rock
Spring Green
Wisconsin River
Blue River
Muscoda
Boscobel
Wauzeka
Prairie du Chien
Big Green River
Bridgeport
Madison
SCENIC
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0 10 20
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QUALIFYING SEGMENTS
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Wisconsin River
STUDY LOCATION

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State Protection Efforts

Wisconsin's Department of Natural Resources is in the process of developing a management plan to protect and manage recreational use on 92 miles of the river below Prairie du Sac. This plan, yet to be finalized, proposes the acquisition of more lands and easements to consolidate and expand existing state protected lands from 29,000 acres to 71,000 acres. The draft management plan also calls for designating the corridor as the Lower Wisconsin River State Forest and addressing ways to accommodate the competing recreational, biological, and economic demands facing the river. Concerns noted in the draft plan were the growing intensity of recreational use and increasing land development on the shoreline and nearby scenic bluffs. The department's planner expects the planning process to be completed by the end of 1986 and the plan to be reviewed and approved sometime in 1987. He said that developing and implementing the plan is the top priority within the department.

In the meantime, aside from protection of shorelands and islands currently under public ownership as parks, wildlife areas, and scenic easements, a 1984 study of state river programs[2] noted that local government shoreland and floodplain zoning programs (required by state law) provide some limits on the proximity of development along the river. However, the federal study noted that although all six counties along the corridor had adopted ordinances to comply with state requirements, the ordinances were not uniformly enforced and that restricting riverfront development was not a major concern to most counties.

Status of Developments

To obtain information on developments along the lower Wisconsin River study corridor, we interviewed by telephone the Department of Natural Resources lead planner on the Lower Wisconsin River State Forest proposal and an associate professor of landscape architecture at the University of Wisconsin-Madison who has researched recreational and scenic management issues on the corridor and is on the Citizen's Advisory Committee for the department's proposal. We reviewed documents provided by these sources to identify current conditions along the river corridor and for information on the state's planning objectives. Information concerning water projects and water quality was also obtained from other federal agencies.

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[2] Robert C. Hoffman and Keith Fletcher, America's Rivers: An Assessment of State River Conservation Programs, (River Conservation Fund, 1984).

Water Projects

In 1979, the federal study noted that although there were no dams on the lower Wisconsin River, its flow was greatly controlled or influenced by the extensive system of 47 storage reservoirs and 26 hydropower dams above Prairie du Sac. The effect of these upstream reservoirs and dams did not preclude, however, the use of the lower Wisconsin by boaters and canoeists even though there were some negative impacts. According to the department's planner, the low-flow conditions and widely fluctuating water levels on the lower Wisconsin continue to create negative impacts for recreationists and the fish and wildlife habitat below the Prairie du Sac dam. Further, he noted that public interest remains very strong that no water projects be allowed on the lower Wisconsin to keep its free-flowing condition. The department's planner told us that one objective of the river management plan is to get the corporations controlling the upstream hydropower and storage systems to alter their operations in order to improve the water-level fluctuation problems on the lower Wisconsin. Although the department has authority to regulate upstream water levels and flows, their authority is subject to preemption by FERC. The planner also told us that this will be a controversial issue. Because the river is so long (430 miles), it will be difficult to reach agreement among upstream and downstream interests affected by the dams.

Our contacts with FERC, Corps of Engineers, and SCS identified no water projects being planned or considered by those agencies for the lower Wisconsin.

Shoreline Development

The federal study noted that although much of the river corridor was undeveloped natural, forested, or wetland areas, shoreline development was noticeably present, particularly mobile homes and vacation cabins clustered near the small towns at the river's edge. As discussed below, shoreline development continues to be a concern. The federal study also found that despite the state's shoreland and floodplain land use zoning program in effect at local levels to control the siting and type of structures along the river, apparently inconsistent development was occuring because of uneven enforcement.

According to the department's planner, since 1979 some scattered development has occurred within the river's floodplain that the state would like to remove. The University of Wisconsin professor told us that more development in the floodplain is unlikely because of the inhospitable conditions there. But both told us that the greatest threat of development is on the scenic bluffs overlooking the river, which lie outside of the corridor area addressed by the federal scenic river study. According to the professor, these bluffs are the most important scenic resource, but they are not protected by statewide or local zoning. The study had generally assumed these areas to be "undevelopable," but both sources report that given their proximity to major urban areas and improved economic conditions, these areas have become more attractive for second-home development. Developers reportedly are buying these areas on speculation and subdividing them. Although much of the bluffs are as yet undeveloped, a 1984 survey by the professor revealed that 26 percent of the landowners want to sell their lands for development.

The draft river management plan has proposed state action to adopt a zoning program with land use standards and enforcement provisions to control and direct future development on the 14,825 acres of scenic bluffs along the river. The department's planner emphasized that the state does not want to acquire lands on the bluffs to protect their scenic values but rather wants to get the local governments to implement appropriate zoning controls. However, the draft plan states that if zoning proves ineffective, the state could then purchase scenic easements or lands to protect the bluffs' scenic beauty. The University of Wisconsin professor told us it is uncertain whether the Citizens Advisory Committee or local governments will agree to the proposed zoning strategy for protecting the bluffs. He is skeptical that the state would follow through with an acquisition strategy in the face of local opposition to government control of development on the bluffs.

Water Quality

The 1979 federal study found that water quality had been impaired to the point where the lower Wisconsin was safe only for partial body contact (fishing, canoeing, boating) and not for swimming, but quality was expected to improve. Since that time impairment has lessened but still exists, and further improvement is planned, according to state officials. The federal study noted several pollution problems along the entire corridor caused by inadequate sewage treatment, agricultural fertilizers, and sedimentation from stream bank erosion caused by the daily fluctuation of stream flow from the operation of upstream water projects.

According to the state's draft management plan issued in 1985, water quality has improved, but the river is still affected by pollutants from farm runoff, sewage treatment plants, inadequate septic systems, industrial waste, and other sources. According to the University of Wisconsin professor, water quality conditions overall have improved, but agricultural uses contribute to pollution and sedimentation. In his opinion, the state's management plan for the lower Wisconsin should further improve water quality, since it addresses water quality threats such as fluctuating water levels and shoreline development. The department's planner said the state is preparing a Water Quality Improvement Plan that will address pollution problems in the future.

Resource Development

The federal study found that 43 percent of the Wisconsin River study corridor was forested and that agricultural lands comprised 32 percent. Wetlands, much of it unsuitable for agricultural use, made up 13 percent of the corridor. The study concluded that agricultural uses at that time (livestock and crop production) were compatible with scenic river protection but noted that some minor changes to timber harvest procedures would be needed to protect scenic values.

According to the University of Wisconsin professor, there has not been negative resources development along the Wisconsin River since the federal study. He said that the poor farm economy has not led to more forested areas being cleared for agricultural development. One of the objectives in the state's proposed river management plan is to improve forest resource management for the production of timber products. Forest management will consider and strike a balance between timber production, wildlife habitat, scenic protection, and recreation use.

Roads and Utilities

In 1979 roads and utilities were a notable feature of the corridor. According to state officials, current state highway department plans could adversely affect scenic qualities, but new proposals address powerline intrusion. The federal study found that roads and railroads paralleled and frequently crossed most of the river corridor, often occupying land on both banks. Although this helped public access to the river and the roads were generally screened, it was noted that river users would be aware of traffic noise for most of the course. Fourteen powerline crossings were also noted. The study recommended that future management attention be given to minimizing or carefully controlling new roads and utility projects to protect the corridor's scenic values.

According to the state's draft management plan, the state highway department's project to upgrade State Highway 60 (which parallels the corridor from Sauk City almost to the Mississippi River) on the north shore in the Orion-Gotham area could alter the highly scenic nature of some of the most prominent bluffs on the corridor. This project involves straightening and widening the highway and could involve significant cuts into the bluff faces. The department's lead planner told us he expects potential conflict with the highways department over this matter because of the scenic impacts. With regard to powerlines, the state's draft plan proposes that, for department-owned lands on the corridor, new powerlines or replacement of overhead lines will be buried where possible. Proposed zoning provisions for private lands similarly call for burying powerlines.

Recreational Use

The federal study noted the high-quality and varied recreational opportunities available along the lower Wisconsin. Although future management needs were noted (to provide more public access sites and recreational facilities to minimize trespass, litter, and other impacts), existing recreational use was described as "light to moderate." Since 1979 recreational use has so rapidly increased on the corridor that state and public concerns are now focusing on this as one of the most serious threats to the unique and scenic qualities of the river valley.

As of July 1985, the corridor drew about 500,000 recreationists each year, including 95,000 beach users, 75,000 anglers, 50,000 canoeists, 40,000 hunters, and 20,000 sandbar campers. The Department of Natural Resources estimates that use will increase to 700,000 people annually by the year 2000. As noted in the department's 1985 draft plan, recreational use is concentrated in the upper third of the corridor (between Prairie du Sac and Spring Green), and conflicts have arisen or worsened between different users and with private land owners, creating safety and public nuisance problems. The draft plan also notes that although recreation has increased, public support facilities have not kept up. Access points were cited as being inadequate, restrooms unavailable, and drinking water and telephones nonexistent.

The draft management plan for the corridor notes that the continued lack of any coordinated management has allowed litter, user conflicts, erosion, vandalism, pollution, noise, and incompatible recreational uses to become serious problems in many areas of the corridor. One of the state-proposed management plan's goals is to provide a quality public use area for unique river corridor activities and compatible recreational pursuits. The department's aim is to provide a consistent, comprehensive, up-to-date program for future recreational use, as well as resource management and scenic preservation in the river corridor. Proposed actions include developing new or improved access points for boaters and improving public facilities and services for river and beach users, picnickers, campers, trail users, car touring, and nature watchers.

Summary

Since 1979 threats to the lower Wisconsin's scenic qualities have increased, but the state is moving forward with a comprehensive management plan addressing the resolution of these problems. Shoreline development has increased, and the state is concerned about development on the overlooking scenic bluffs, which were not included in the federal study's scenic river corridor. Recreational use problems, which were not significant during the federal study period, have grown considerably and, according to the state's planning agency, are a major threat to the river's scenic and recreational values. Although it has been almost 8 years since the federal study was completed and the state is still without a management program, from all indications the state's plan will be finalized and implemented sometime in the next year. How much the final plan will change from the draft now being considered by the Citizen's Advisory Committee, the department, and other local and public groups is not clear. The state's planner told us that developing and implementing the lower Wisconsin River management plan is the department's top priority.

Youghiogheny River, Maryland and Pennsylvania—Summary of Development

Background

The federal wild and scenic river study found that a 22-mile segment of the north-flowing Youghiogheny River in western Maryland and a 27-mile segment in southwestern Pennsylvania qualified for inclusion in the national system.[1] The study corridor possessed substantial natural values, especially outstanding white water, impressive scenic beauty of narrow, heavily forested gorges, and excellent trout fisheries. The Maryland segment was noted for its generally inaccessible, primitive character.

The federal study recommended that Maryland and Pennsylvania generally continue their management efforts to protect the corridor and, if desired, apply for national designation to the Secretary of the Interior under the act's 2(a)(ii) provisions. The President concurred with these recommendations in transmitting the report to the Congress. In 1971 Maryland designated its segment as a State Wild River, and by 1976 had adopted land use zoning regulations to protect scenic and natural resources. In commenting on the draft federal study, the Pennsylvania Department of Environmental Resources noted that federal land acquisition and management of fishing and recreation programs would be impractical in light of Pennsylvania's existing investment and relatively effective programs on the river. As a result, the federal study recommended that Pennsylvania designate the segment as a component of its Scenic Rivers System, noting that over 50 percent of the segment was within Pennsylvania's Ohiopyle State Park and adjacent game lands. Adoption of zoning regulations by local governments to protect the remaining 3,500 acres of privately owned land in the Pennsylvania segment was recommended.

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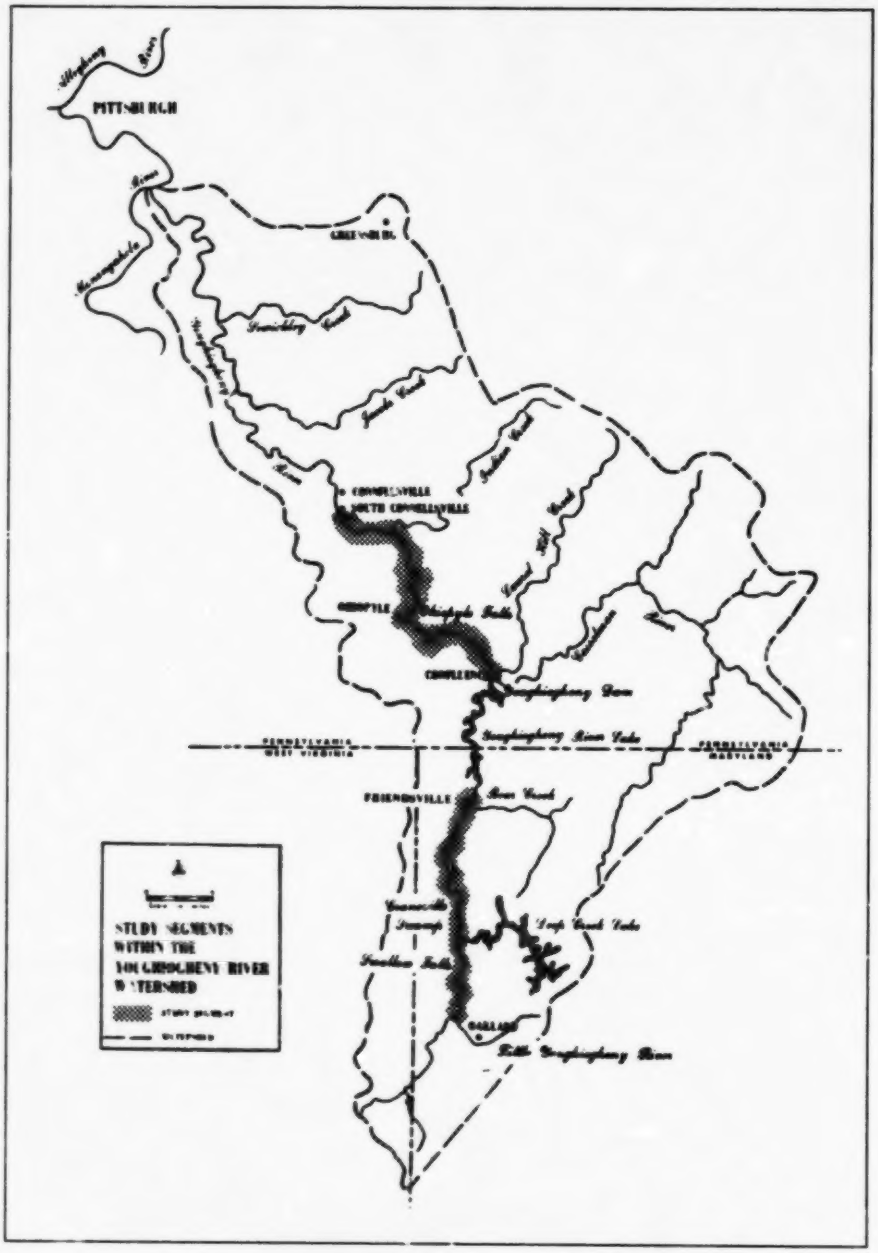
[1] Study authorized—Oct. 1968; study conducted by the Heritage Conservation and Recreation Service, Department of the Interior and completed—Sept. 1978; study sent to the Congress—Oct. 1979.

Figure XII.1: The Youghiogheny Wild and Scenic River Study Corridor


Allegheny River
PITTSBURGH
River
Monongahela
GREENSBURG
Sewickley Creek
Youghiogheny
Jacobs Creek
Indian Creek
River
CONNELLSVILLE
SOUTH CONNELLSVILLE
Laurel Hill Creek
OHIOPYLE
Ohiopyle Falls
Casselman
River
CONFLUENCE
Youghiogheny Dam
Youghiogheny River Lake
PENNSYLVANIA
WEST VIRGINIA
PENNSYLVANIA
MARYLAND
FRIENDSVILLE
Bear Creek
Cranesville
Swamp
Deep Creek Lake
Swallow Falls
OAKLAND
Little Youghiogheny River
STUDY SEGMENTS
WITHIN THE
YOUGHIOGHENY RIVER
WATERSHED
STUDY SEGMENT
WATERSHED

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State Protection Efforts

Maryland and Pennsylvania have taken different approaches toward the corridor. Since completion of the study in 1978, Pennsylvania has not designated its Youghiogheny segment as part of the state Scenic Rivers System, nor have local governments adopted zoning controls for corridor lands under their jurisdiction. Local opposition to federal and state scenic river designation led the state to decide against implementing this approach, even though the state had no plans to acquire much more land along the corridor except from willing sellers for specific recreation management purposes. According to the Ohiopyle State Park superintendent, the state continues to protect scenic and natural resources within the extensive state park and game lands as it did before 1978.

Maryland continues to manage its Youghiogheny River segment as a state wild river, amending the 1976 land use regulations in 1979. The regulations limit or prohibit various land uses, including home building, logging, agricultural uses, mining, commercial uses, and stream alterations. Although most residents preferred state and local efforts to protect the river rather than federal designation, once the state's regulations were implemented they have been opposed by many landowners. One objection was that the regulations applied to too large of a corridor (the state adopted a boundary slightly smaller than the federal study's 11,400 acre visual corridor). Landowners were also concerned that their property rights were restricted without financial compensation by the state.

In response Maryland's Department of Natural Resources has reduced the corridor's boundaries in two steps to now include about 5,600 acres. Controversy continued throughout this period, and in 1984 the state legislature required the department to develop and implement a river management plan in cooperation with the local public and appropriated $1 million under Maryland's Program Open Space for the department to buy lands and scenic easements in the corridor. However, the department is prohibited from buying land on the river unless it first sells the same amount of existing state lands in Garrett County, where the corridor is located. The department is in the process of developing the management plan in close consultation with the Youghiogheny Local Scenic and Wild River Advisory Board. Department officials indicate that once the plan and acquisition program is implemented, the role of land use regulations to protect the corridor will be deemphasized.

In the meantime, since 1984 a nonprofit organization, the Natural Lands Trust, has been carrying out its land protection program for the Youghiogheny wild river corridor in Maryland. This group has identified several important natural and recreational access tracts on the segment that it intends to buy. In some cases the scenic easements may in turn be sold to the state when it is in a position to buy. The trust is hoping to manage some of the lands for public use.

Status of Developments

In order to obtain information about developments on the Youghiogheny River study corridor since 1978, we interviewed state agency officials in Pennsylvania and Maryland involved with land use management and planning. We also visited both segments in May 1986 to observe developments. In Maryland we met with the Director, Land Planning Services, Department of Natural Resources, and the lead planner for the Youghiogheny River management plan. In Pennsylvania we met with the Park Superintendent, Ohiopyle State Park, Department of Environmental Resources. We also discussed developments and protection efforts on the Maryland segment with the director and field representative of the Natural Lands Trust. Documents obtained from these sources were reviewed to provide additional information. We also checked with various federal agencies to identify information about water projects and water quality. Since we found that no negative change had occurred within the corridor regarding roads and utilities, this summary does not address that area. Pennsylvania's park and game land management has precluded new roads or utilities on that segment and Maryland's land use regulations prohibit roads except those necessary to reach developments permitted under the regulations. The effect of new logging roads in Maryland are discussed under resource development.

Water Projects

The federal study reported that both segments were in free-flowing natural condition, without impoundments or other modifications. This condition on the Maryland segment remains the same, but a hydropower facility on the Pennsylvania segment's existing dam has been licensed. At the time of the federal study, two major dams outside of the study segments affected their flow conditions. An electric utility company operated a dam built on the Deep Creek tributary in Maryland for hydroelectric power production. Monday to Friday, water releases from the dam's Deep Creek Lake through a conduit to the power plant on the study segment raised the Youghiogheny's water level for a few hours.

These releases improved white-water rafting conditions on the Maryland segment, which normally has inadequate flow. The Corps of Engineers' 185-foot-high dam below Confluence, Pennsylvania, created the 16-mile-long Youghiogheny River Lake, separating the Maryland and Pennsylvania segments. This dam was built for flood-control purposes. Daily water releases at the Pennsylvania end supported its trout fishery, boating recreation, and water pollution control.

Although the Maryland segment had undeveloped hydropower potential, the study reported no private or public interest in constructing additional projects there. The only known potential water project on the Pennsylvania segment was the possible modification of the Corps' dam for hydroelectric power. The study did not indicate whether this would be an incompatible use.

Since 1978 no additional hydroelectric projects have been built or proposed on the Maryland segment. Maryland's wild river regulations prohibit any alteration of the river or its banks, except for bridge repair. Further, officials told us there is no interest in developing hydropower projects. The Department of Natural Resources Land Planning Services' director told us that the utility company that operates the Deep Creek facility wants to sell its shorelands, reinforcing the conclusion of no potential for development. The Natural Lands Trust is negotiating with the company to buy these lands.

In 1985 FERC granted a license to the borough of Seven Springs, Pennsylvania, to modify the Corps' Youghiogheny River Dam to produce hydroelectric power. Concerns were raised by federal and state agencies and recreation and conservation groups about the impacts of this proposal on downstream fisheries and recreational values. However, because the Corps' authorized operation of the dam requires it to maintain certain water release levels and schedules, FERC's license requirements state that the borough's proposed project can be built and operated only without modifying the Corps' existing operations. Thus, according to Corps officials and the FERC license, downstream flow conditions and associated values will not be affected. Pennsylvania's Department of Environmental Resources and Fish Commission are closely involved with the Corps to ensure that the borough's project will not harm downstream recreation and fisheries.

FERC reported that in commenting on the proposal, the National Park Service was not aware of adverse effects the project would have on the scenic river study corridor. A Corps official told us that the borough has yet to present specific design plans for the project, and so the necessary memoranda of agreements between the Corps and the borough on the project's operations remain to be developed. He emphasized to us that the Corps will not subordinate its current project operations in order to better accommodate a hydroelectric project.

The Ohiopyle State Park superintendent told us that a few years ago a private developer proposed to build a hydroelectric power project on Meadow Run Falls, a highly scenic tributary to the Youghiogheny located within the park. After Pennsylvania objected strenuously because of the project's impacts on the park's resources, the developer dropped the idea.

We identified no other water projects by federal agencies that would degrade the corridor's values. However, a small SCS watershed project is being planned on a Pennsylvania tributary (Laurel Hill Creek, near Confluence). According to an SCS official, this project will reduce soil erosion and livestock waste pollution, which will benefit the Youghiogheny.

Shoreline Development

The Youghiogheny's largely undeveloped, heavily forested gorges were ranked high by the federal study as a qualifying natural feature. They remain in much the same condition. The federal study contrasted the Maryland segment's 95-percent private ownership of corridor lands with Pennsylvania's majority ownership of corridor lands in state park and game lands or conservation-oriented land trusts. Little development had yet occurred on privately owned lands, because of both the steep terrain and the inaccessibility of the Maryland segment. Because so much of Pennsylvania's segment was publicly managed for conservation purposes, the study did not predict much development there. However, the study predicted more subdivision of Maryland's corridor for vacation homes.

According to state officials, since 1978 little change has taken place in shoreline development on either segment, and no more lands have been subdivided on the Maryland corridor since the federal study. Maryland's regulations prohibit commercial and industrial developments and require residential buildings to be set back at least 300 feet from the river, with minimum lot sizes of 10 acres in zone 1 and 5 acres in zone 2 (the more remote and rugged areas). The Natural Lands Trust director expressed concern that allowing building within zone 1 was not compatible with protecting the corridor's wilderness character.

Water Quality

Aside from acid mine drainage problems (discussed under Resource Development), the federal study noted pollution problems on both segments caused by untreated sewage. This situation has improved in Pennsylvania because of new sewage treatment plants but not completely in Maryland, according to state officials. The federal study noted that the Maryland segment received untreated sewage from Oakland and Friendsville, although water quality could improve with construction of planned sewage treatment plants.

As of May 1986, Oakland was still discharging over 400,000 gallons a day of raw sewage into the Youghiogheny. The Oakland plant has not been built because of the town and state disagreement over sewage treatment for 47 years. Although a facility has been identified for use in sewage treatment, the state and town have been unable to agree over various matters relating to the plant. Since 1978 the department's planner told us that some improvement with sewage treatment has occurred in Maryland—problems for the Youghiogheny trout fishery were averted when a decision was made to use ultra-violet technology, rather than chlorination, at the Deep Creek Lake sewage treatment plant.

Recreational Use

The federal study found that both Maryland and Pennsylvania segments offered outstanding recreational opportunities. Since then, recreational use has increased on both segments, creating management problems for the state of Maryland. In 1978 use was limited on the Maryland segment because of its inaccessibility and exceedingly difficult white-water conditions. Intense recreational use was noted on the Pennsylvania segment because of the outstanding white water, fishing, and other recreation possible in Ohiopyle State Park. The study noted that rapid growth in white-water boating on this segment had diminished the scenic and recreational values. The federal study discussed the need for the future managing agency to control growing recreational use in order to accommodate the needs of white-water users, anglers, and others and improve visitor safety. At the time, Pennsylvania was making an effort to limit the number and timing of people boating on the river. The state was also planning to convert an abandoned railroad paralleling the river inside the park into a bicycling/hiking trail.

Since 1978 recreation use on the Pennsylvania corridor area has doubled to 2 million annual visitors. In 1980, after detailed study and public input, the Department of Environmental Resources implemented a quota and reservation system for white-water recreationists. The department's system requires all private and commercial boaters to obtain a launch permit to enter the river on a certain day and time. No more than 60 boaters can enter the river at one time (1,920 maximum per day). The state also constructed extensive facilities and set up new services (such as remote parking, commercial group organizing sites, shuttle buses, safety instructions, and ramps) to minimize the impacts of so many people on the river corridor. Ohiopyle State Park's superintendent who oversees the system describes it as being very successful in protecting the popular river from being "loved to death" by the public.

In May 1986 the park officially opened the 9-mile bicycling/hiking trail along the abandoned railroad. In 1978 the Department of the Interior granted funds to the state to acquire the right-of-way. The state removed the tracks and smoothed and landscaped the trail, which connects to existing hiking trails throughout the park. This development significantly expands recreational opportunities along the river study corridor on a year-round basis.

Although access is still very limited on the Maryland Youghiogheny segment, white-water recreation has substantially increased since 1978. The segment between Sang Run and Friendsville has earned a growing reputation as the best white-water river in the East. Since about 1982, commercial rafting companies have been taking groups of rafters and more private kayakers have been using the river than ever before. The growing popularity of the segment among white-water recreationists, combined with the complete lack of public facilities or management to accommodate them, has created controversy with area residents. Since more than 95 percent of the Maryland corridor is privately owned, area landowners and residents are concerned with the growing crowd, trespass, and public nuisance problems. Landowners also believe the Department of Natural Resources has been inequitable in regulating their land use while not regulating white-water recreation.

Maryland's river management plan now being drafted by the department and the local advisory board will address as a major issue the continuing conflicts between private landowners and white-water recreationists. A department official said area landowners are pressing the state to develop regulations to control the level of commercial rafting. One commercial operator has expressed support for some type of regulation, recognizing that uncontrolled crowds would detract from the river's high-quality white-water experience. The department's lead planner told us that the state would prefer not to be responsible for managing public access points on the wilder, white-water stretches below Sang Run. The Natural Lands Trust has expressed interest in buying and managing these areas for public access on a user-fee basis.

Resource Development

The federal study found that active and abandoned coal mining operations in the vicinity of the study corridor affected water quality on the Youghiogheny. We learned from state sources that coal mining continues to be a problem, and logging activities have degraded scenic values in Maryland. At the time of the federal study, water quality on the Pennsylvania segment was below the state's standards largely because of acid mine drainage from coal mining. Efforts were planned to correct the problems in both segments. Aside from coal mining, the federal study noted little resource development potential that would affect the corridor.

Since 1978 the nearby coal mining activities continue to affect water quality of both segments, according to state officials. In Pennsylvania the expected actions to correct acid mine drainage have not yet commenced because of other higher-priority problems. According to the Ohiopyle State Park superintendent, sport fishing groups and the state Fish Commission continue to be concerned with the problem, which is limiting the corridor's trout fishery.

In Maryland some severe but localized water pollution from acid mine drainage is found on upstream segments or on tributaries outside of the study corridor. The state identified acid mine drainage directly affecting tributaries on the corridor—Glade Run, Laurel Run, Salt Block Run, White Rock Run—as well as some areas of the main stem. Although the acid runoff is mostly diluted on the Youghiogheny, the state considers it a threat to the river's fisheries and other values. The state's draft river management plan expects that continued enforcement and abatement efforts will improve these problems.

Maryland's land use regulations prohibit mining within the Youghiogheny wild river corridor. According to the department's planner, the state's original scenic corridor (11,400 acres) included the White Rock area, where a company wanted to strip-mine coal. The ensuing controversy helped lead the state to modify the corridor's boundaries to exclude the area. Strip mine operations subsequently commenced in this area. The planner noted that the most recent state remapping of the visual corridor shows that the mined area is visible from the river, but because of the mining, it remains excluded. He told us that mining operations ended in 1985, and the operator began seeding and replanting the area to reestablish vegetation.

On the Maryland segment, a more controversial resource development since 1978 is logging on the adjacent privately owned steep slopes. Maryland's regulations allow logging under department review and approval. The regulations require that shoreline vegetation remain undisturbed to screen the logged area from the river, but the department has had difficulty enforcing these regulations, according to a department official. As a result, some logging has occurred without obtaining the state's approval, according to state and environmental group sources. Further, state officials told us that some permitted logging operations are not following practices to minimize impacts on the river.

In 1984 the department sued the logger who was operating without department approval for violating the state Scenic River Act. The court ruled in favor of the logger. The judge ruled that because the state's wild river boundaries were not marked on the ground, the operator could not know he was in the corridor. However, as is the case in most of the corridor, the department had been denied access to the private property to mark the boundary. Thus, the ruling, which the state did not appeal, has made it likely that other unauthorized logging will commence. The department's planner has since heard reports of unauthorized logging in the corridor, but the state has not investigated. He told us that the department does not have staff or capability to monitor logging activities to enforce their rules.

The area's inaccessibility contributes to the department's problem. In May 1986 we observed from the river the visual and physical impacts of logging. Tree stumps; rough, steeply graded logging roads; and signs of soil erosion are clearly visible on one of the segment's most primitive and remote stretches. An official from the Natural Lands Trust indicated that he is very concerned about the negative effects logging will have on the Youghiogheny's scenic and wilderness values. He cited the impacts of bulldozers knocking soil and boulders into the river and the cutting of logging roads down to the river that will lead to incompatible public access to the river via all-terrain vehicles.

Summary

Since 1978 the most notable developments on the Youghiogheny River study corridor are logging on the Maryland segment and the licensed, but not yet constructed, hydroelectric power modification to the Corps of Engineers dam on the Pennsylvania segment, according to state and environmental group officials. We found that some problems, as well as expected improvements, noted in the federal study continue—water quality problems on both segments and recreation-use controls in Pennsylvania. We also found that shoreline conditions had not changed much since 1978.

Maryland designated its segment as a state wild river in 1971, but the land use regulations it implemented have created local controversy and raised questions about the consistency of permitting certain uses, such as logging and residential development. In addition, the state has reduced the size of the corridor by 50 percent since 1978. In one case, this has allowed a strip-mine operation to commence that the state acknowledges is visible from the river. Since 1984 Maryland's program direction has shifted from the use of the land use regulations to developing and implementing a Youghiogheny River management plan as well as acquiring lands and scenic easements. A private nonprofit group is currently implementing its protection plan to acquire certain important natural areas in the Maryland segment.

Pennsylvania did not designate its segment as a component of its scenic rivers system. However, we found that the state's park and game land management activities that were supported by the federal study continue to address protection of the segment's significant resources. The state actively discouraged hydroelectric development of a scenic tributary inside the state park and worked closely with the Corps to ensure that the proposed hydroelectric modification would not harm downstream resources. Finally, the state implemented an extensive recreation management and improvement effort to mitigate the negative effects of too many boaters on the river and developed a bicycling/hiking trail on an abandoned railroad.

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